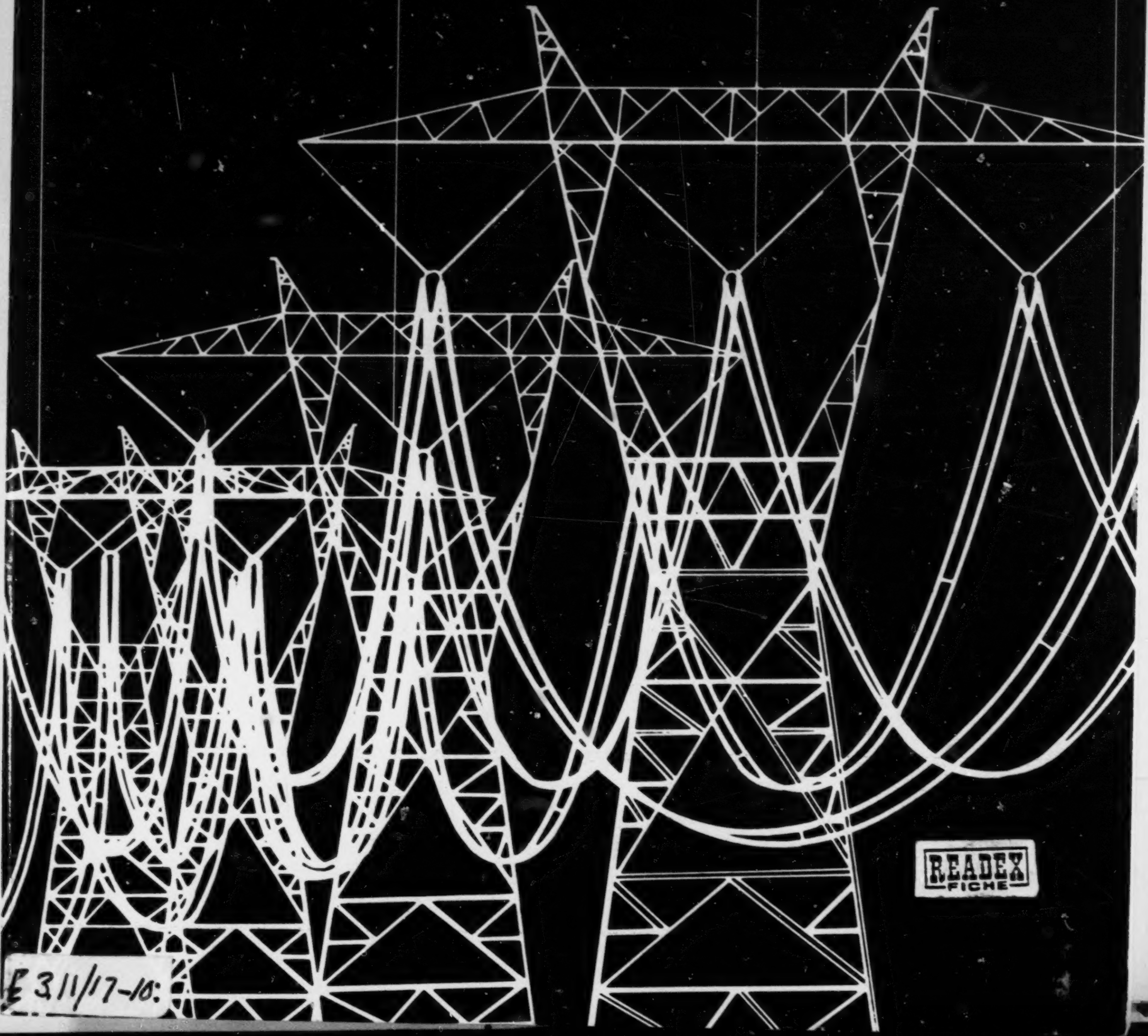
781

Electric Power Annual

Energy Information Administration
Office of Coal, Nuclear, Electric, and Alternate Fuels
U.S. Department of Energy

November 1982



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This report is an annual version of the **Electric Power Monthly**. Effective September 1982, the following reports were superseded by this publication.

- **Power Production, Fuel Consumption, and Installed Capacity Data - Annual**
- **Electric Energy and Peak Load Data - Annual**

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Electric Power Annual

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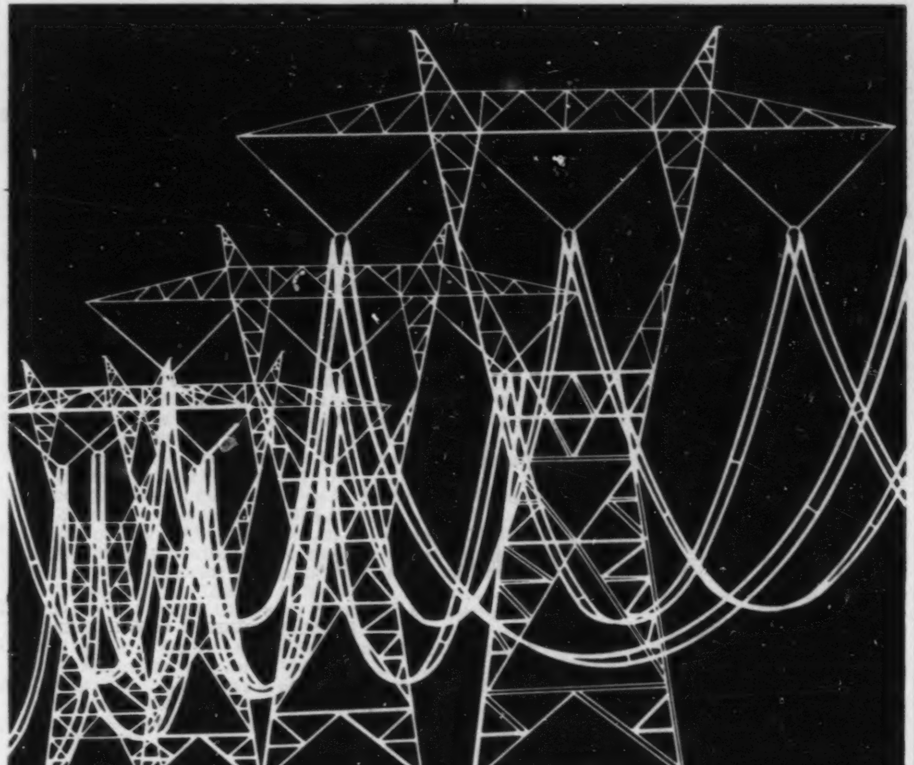

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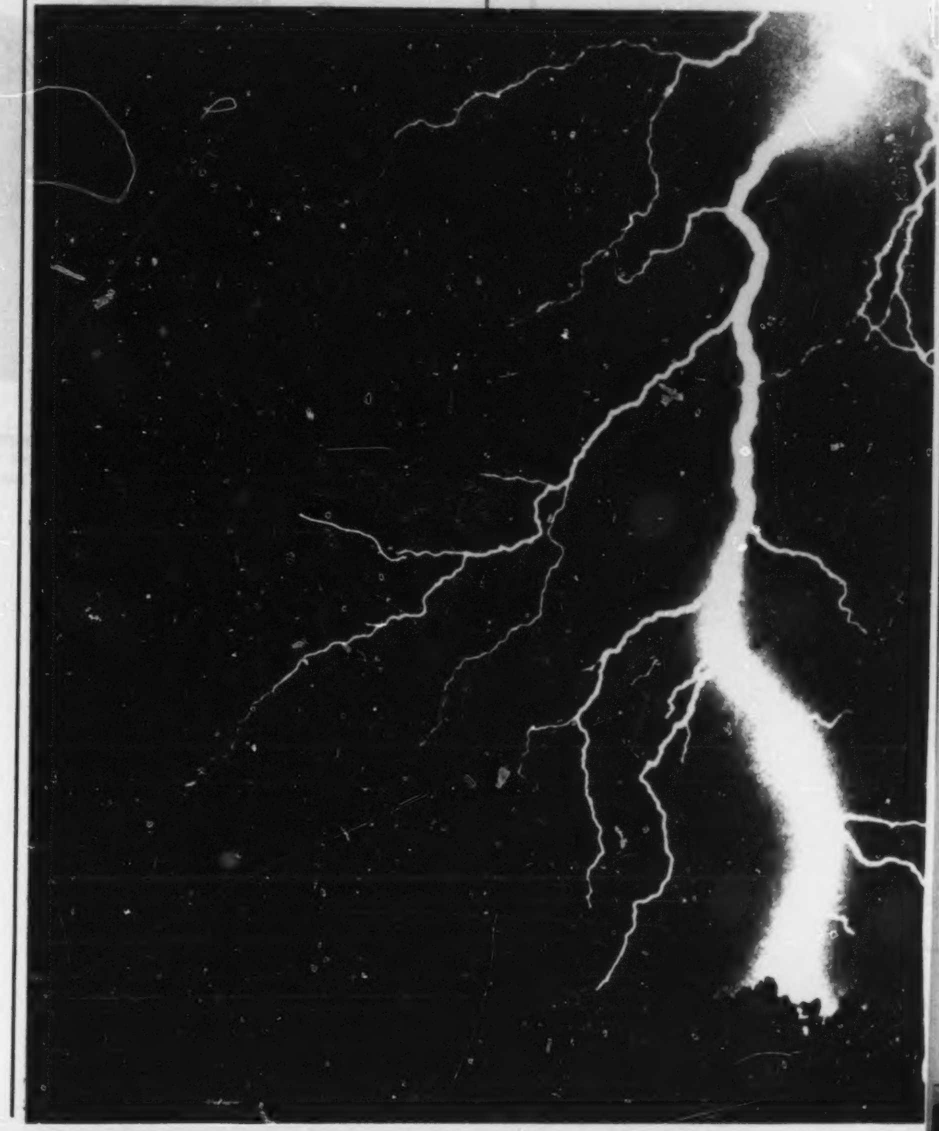
Highlights



Highlights

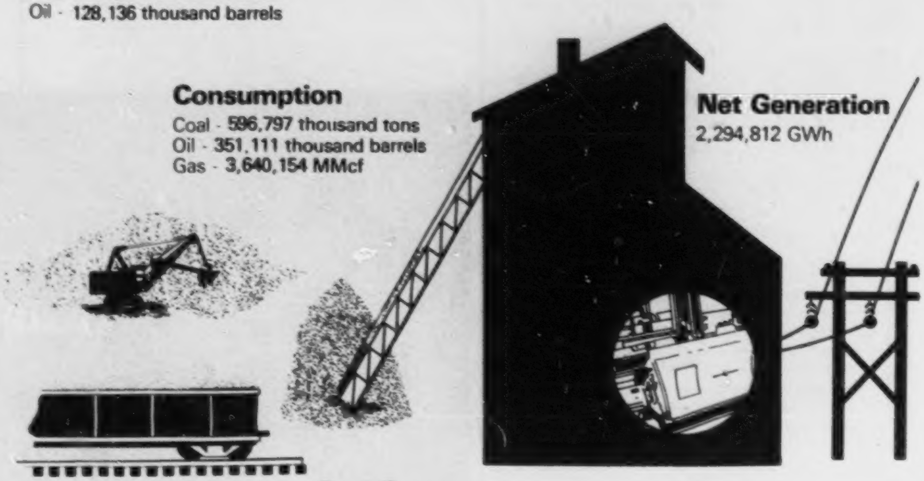
Electric Power Summary

Capacity*
634,808 MW

Stocks*
Coal - 168,893 thousand tons
Oil - 128,136 thousand barrels

Consumption
Coal - 596,797 thousand tons
Oil - 351,111 thousand barrels
Gas - 3,640,154 MMcf

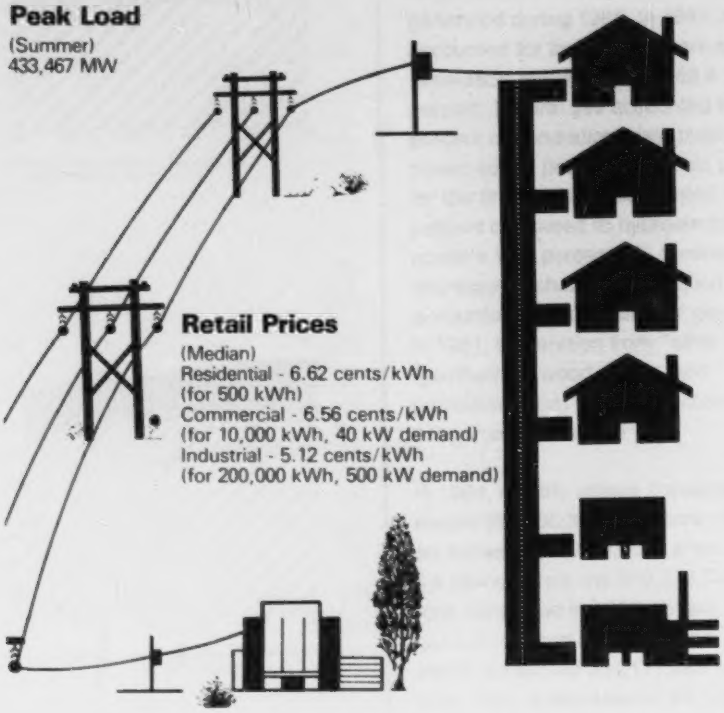
Net Generation
2,294,812 GWh



Receipts
Coal - 579,374 thousand tons
Oil - 334,769 thousand barrels
Gas - 3,552,659 MMcf

Fuel Costs
Coal - 153.2 cents per million Btu
Oil - 538.7 cents per million Btu
Gas - 281.9 cents per million Btu

Statistics for 1981



Peak Load
(Summer)
433,467 MW

Projections
Summer Peak Load
in 1991
592,541 MW
Net Energy for
Load in 1990
3,150,953 GWh

Retail Prices
(Median)
Residential - 6.62 cents/kWh
(for 500 kWh)
Commercial - 6.56 cents/kWh
(for 10,000 kWh, 40 kW demand)
Industrial - 5.12 cents/kWh
(for 200,000 kWh, 500 kW demand)

Net Energy For Load
2,308,696 GWh

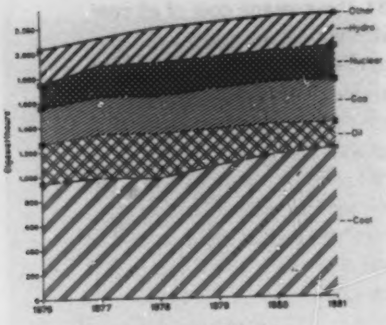
Sales, Revenues & Income
Sales
2,111,440 GWh
Total Electric Operating
Revenues for Class A & B
Privately-owned Utilities
$102,701 million

For additional information concerning these statistics, see corresponding chapters.

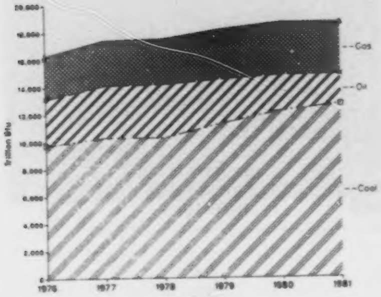
***as of December 31,1981**

Energy Information Administration
U.S. Department of Energy
Office of Coal, Nuclear, Electric and Alternate Fuels
Washington, D.C. 20585

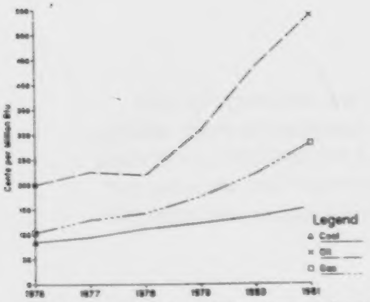
Highlights



Net Electric Power Generation by Fuel, 1976–1981
Source: Federal Power Commission Form 4.



Consumption of Coal, Oil, and Gas by Electric Utilities, 1976–1981
Source: Federal Power Commission Form 4 and 423.



Cost of Coal, Oil, and Gas at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, 1976–1981
Source: Federal Power Commission Form 423.

During 1981, electric utilities in the United States generated 2,294,812 gigawatthours (GWh), a new annual record for the industry. This record amount was an increase of 8,373 GWh or 0.4 percent from the 2,286,439 GWh generated during 1980. In 1981, coal accounted for the largest share of generation among all fuels, 52.4 percent. Natural gas accounted for 15.1 percent of generation while nuclear power edged past hydroelectric power for the first time as it accounted for 11.9 percent compared to hydroelectric power's 11.4 percent. Oil continued to decrease its share of generation as it accounted for 9.0 percent of generation in 1981. Generation from "other" (geothermal, wood, waste, and petroleum coke) sources accounted for 0.3 percent during the year.

In 1981, electric utilities consumed a record 596,796,833 short tons of coal, an increase of 27,523,098 short tons or 4.8 percent from the 569,273,735 short tons consumed in 1980. Steam, gas-turbine, and internal combustion plants consumed 351,111,286 barrels of oil in 1981, a decrease of 69,102,946 barrels or 16.4 percent from the 420,214,232 barrels consumed in 1980. Electric utilities also consumed 3,640,153,669 thousand cubic feet (Mcf) of natural gas, a decrease of 41,441,646 Mcf or 1.1 percent from the 3,681,595,315 Mcf consumed in 1980.

The installed nameplate generating capacity of U.S. electric utility plants on December 31, 1981 was 634,808 megawatts (MW), an increase of 21,262 MW or 3.5 percent from 1980. Of this total, 439,888 MW were in fossil steam on December 31, 1981, 60,776 in nuclear, 77,145 in hydroelectric, and 56,999 in gas-turbine/internal combustion units.

Electric utilities' coal stocks as of December 31, 1981 were 168,893,288 short tons. This amount was 14,116,379 short tons or 7.7 percent lower than in 1980 when utilities stockpiled 183,009,667 short tons in anticipation of the United Mine Worker's strike that occurred in 1981. Utilities' oil stocks at the end of 1981 were 128,135,508 barrels, 7,238,726 barrels or 5.3 percent lower than at the end of 1980. Lower oil stocks also indicate the trend away from using oil to produce electricity by utilities.

Installed Nameplate Capacity, Net Generation, Fuel and Stocks of U.S. Utilities in 1981

Item	Total in 1981	Percent change from 1980	Average Annual Growth Rate, 1976-1981
Installed Capacity[1]	634,808	3.5	3.6
Net Generation[2]	2,294,812	0.4	2.4
Fuel Consumption			
Coal[3]	596,797	4.8	5.9
Oil[4]	351,111	-16.4	-7.9
Gas[5]	3,640,154	-1.1	3.4
Fuel Stocks			
Coal[3]	168,893	-7.7	8.2
Oil[4]	128,136	-5.3	1.8

[1] In megawatts.
[2] In gigawatthours.
[3] In thousand short tons.
[4] In thousand barrels.
[5] In million cubic feet.
Source: Federal Power Commission Form 4.

Highlights (continued)

Electric utilities with plants 25 megawatts or greater in the United States received lower amounts of fossil fuels in 1981 compared to 1980. Coal receipts at electric utilities amounted to 579,374 thousand short tons in 1981, a 2.5 percent decrease from 1980 when coal receipts totaled 593,995 thousand short tons. Oil receipts fell significantly in 1981 to 334,769 thousand barrels, a decrease of 18.1 percent from 1980 when oil receipts were 408,607 thousand barrels. Receipts of natural gas at major electric utilities in 1981 were 3,552,659 million cubic feet. This amount is 0.4 percent lower than the 3,568,694 million cubic feet received by utilities in 1980.

During 1981, the average cost of all coal received at major electric utility systems in the United States was 153.2 cents per million Btu, which was a 13.4 percent increase from 1980 when the average cost of coal was 135.1 cents. The average cost of oil in 1981 was 538.7 cents per million Btu, a 23.4 percent increase from 1980 when the average cost was 436.5 cents. The average cost of all natural gas receipts at utilities during 1981 was 281.9 cents per million Btu, an increase of 27.6 percent from 1980 when the average cost of natural gas was 220.9 cents per million Btu.

Receipts and Average Cost of Fossil Fuels at Electric Utilities with Plants 25 Megawatts or Greater in the United States in 1981

Item	Total in 1981	Percent change from 1980	Average Annual Growth Rate, 1976-1981
Fuel Receipts			
Coal[1]	579,374	-2.5	5.0
Oil[2]	334,769	-18.1	-9.1
Gas[3]	3,552,659	-0.4	3.7
Fuel Costs[4]			
Coal	153.2	13.4	12.6
Oil	538.7	23.4	21.9
Gas	281.9	27.6	22.2

[1] In thousand short tons.
[2] In thousand barrels.
[3] In million cubic feet.
[4] In cents per million Btu.
Source: Federal Power Commission Form 423.

The noncoincident summer peak load in the United States reached a record level of 433,467 MW in 1981, an increase of 0.8 percent from 1980 when the noncoincident summer peak load was 429,837 MW.

During 1981, the net energy for load supplied for customers by major electric utilities was 2,308,696 GWh, an increase of 0.8 percent from 1980 when the net energy for load supplied was 2,290,397 GWh.

Highlights (continued)

Noncoincident Summer Peak Load and Net Energy for Load for Major Electric Utilities in the United States in 1981

Item	Total in 1981	Percent change from 1980	Average Annual Growth Rate, 1976-1981
Noncoincident Summer Peak Load[1]	433,467	0.8	3.5
Net Energy for Load[2]	2,308,696	0.8	2.7

[1] In megawatts.
[2] In gigawatthours.
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Electric utilities in the United States sold 2,111,440 GWh of electricity to consumers in 1981, an increase of 0.8 percent from 1980 when recorded sales were 2,094,449. Sales by customer category in 1981 were: residential, 706,831 GWh; commercial, 501,745 GWh; industrial, 825,716 GWh; and other, 77,149 GWh.

The median residential retail price of electricity, based on statistics from the sale of 500 kilowatthours (kWh) in 40 selected U.S. cities, rose in 1981 to 6.62 cents per kWh from 5.68 cents per kWh in 1980, an increase of 16.5 percent. The median price for commercial use of electricity in 1981, based on the sale of 500 kWh with a 40 kilowatt (kW) demand, was 6.56 cents per kWh, an increase of 11.2 percent from the median price of 5.90 cents per kWh in 1980. Industrial rates, based on the sale of 200,000 kWh with a 500 kW demand, rose to 5.12 cents per kWh in 1981 from 4.40 cents per kWh in 1980, an increase of 16.4 percent.

Sales and Median Prices of Electricity in the United States in 1981

Item	Total in 1981	Percent change from 1980	Average Annual Growth Rate, 1976-1981
Total Sales[1]	2,111,440	0.8	2.6
Residential	706,831	-1.5	3.1
Commercial	501,745	2.8	3.4
Industrial	825,716	1.3	1.8
Other	77,149	4.6	2.1
Median Prices[2]			
Residential	6.62	16.5	9.5
Commercial	6.56	11.2	9.7
Industrial	5.12	16.4	13.0

[1] In gigawatthours.
[2] In cents per kilowatthour for selected cities.
Sources: Federal Energy Regulatory Commission Form 5 and precedessor systems (sales) and Energy Information Administration Form 101 (median prices).

Highlights (continued)

Winter and summer noncoincident peak loads for major electric utility systems in the United States are projected to increase annually by an average of 3.2 and 3.0 percent respectively between 1982 and 1991, according to utilities reporting this information to the Energy Information Administration. The utilities project that by 1991, the winter peak load will reach 534,439 MW while the summer peak load will reach 592,541 MW.

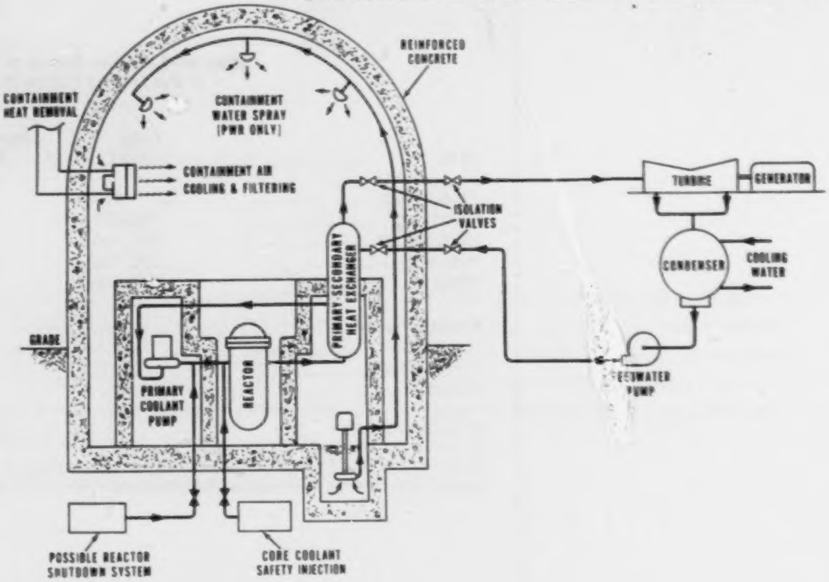
Utility systems have also projected that their net energy for load will increase at an average annual rate of 3.3 percent between 1982 and 1990. The projections indicated that utilities expect net energy for load to reach 3,150,953 GWh by 1990.

Average Annual Growth Rate of Peak Load and Net Energy for Load for Major Electric Utility Systems in the United States

Item	Average Annual Growth Rate	Time Period
Winter Peak Load[1]	3.2	1982-1991
Summer Peak Load[1]	3.0	1982-1991
Net Energy for Load[2]	3.3	1982-1990

[1] In megawatts.
[2] In gigawatthours.
Note: Winter projections for peak load are for the winters 1981-1982 through 1990-1991.
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A.

TYPICAL PRESSURIZED WATER REACTOR


REINFORCED CONCRETE
CONTAINMENT HEAT REMOVAL
CONTAINMENT WATER SPRAY (PWR ONLY)
CONTAINMENT AIR COOLING & FILTERING
TURBINE
GENERATOR
ISOLATION VALVES
PRIMARY-SECONDARY HEAT EXCHANGER
CONDENSER
COOLING WATER
GRADE
FEEDWATER PUMP
PRIMARY COOLANT PUMP
REACTOR
POSSIBLE REACTOR SHUTDOWN SYSTEM
CORE COOLANT SAFETY INJECTION

1. Introduction

The **Electric Power Annual (EPA)** is prepared by the Electric Power Division; Office of Coal, Nuclear, Electric and Alternate Fuels; Energy Information Administration; U.S. Department of Energy.

The **EPA** is designed to provide information about electric power production and consumption in a concise format to satisfy the needs of a wide variety of audiences. This publication is geared to applications by electric utilities, industry, consumers, educational institutions, and government in recognition of the growing importance of energy planning in a contemporary society.

The **EPA** presents an annual summary of electric utility statistics at the National, Regional, and State levels.

The **EPA** contains 12 chapters on electric utility data. Chapters 2-5 are organized around Utility Operations Data and include the following subjects:

- Installed Nameplate Capacity
- Net Electric Energy Generation
- Peak Load - Net Capability
- Net Energy for Load

The next three chapters, 6-8, contain Utility Fuel Requirements and Utilization Data and contain the following subjects:

- Fuel Consumption
- Fuel Receipts
- Fuel Stocks

Chapters 9-11 deal with Financial Data on the electric power industry and include the following subjects:

- Fuel Costs
- Electric Power Retail Prices
- Sales, Income and Revenue

The last chapter deals with Projections through 1991 for peak load and through 1990 for net energy for load.

Annual aggregates are presented in each chapter for the years 1976-1981. Chapters on capacity, peak load, net generation, net energy for load, consumption, receipts, and projections present data at the regional level. All chapters, with the exception of revenues, stocks, and retail prices, present the data in State aggregates. Each chapter contains related text. The lowest level aggregate is State and Census Region data which are summarized annually for 1976-1981. Data are also aggregated in a U.S. Summary and by North American Electric Reliability Council (NERC) Region.

Although the body of the **EPA** is oriented toward professionals that have knowledge of the electric power industry, care has been taken not to burden the audience with too much detail. Data exist at a much finer detail, but would require additional space to present and would not provide the picture of the entire industry that will be presented by State aggregates. Each chapter contains related text, tables, and graphs.

The **EPA** represents the most current data and the best appraisal of the electric utility industry and market available to the Energy Information Administration. Statistics presented herein may differ from those published in earlier reports due to revisions in the data bases, revised definitions, or revised methods of calculation. Please refer to the "Technical Notes" at the back of this report for an explanation of individual definitions or methods of calculation.

Introduction (continued)

The **EPA** routinely utilizes regional definitions developed by other organizations such as the Bureau of the Census and the North American Electric Reliability Council. While the regional definitions utilized are consistent, data reported herein may differ significantly from that reported by other organizations due to differences in respondent definitions, reporting period differences, or differing methods of calculation.

Target Audience for the 1981 Electric Power Annual

The **EPA** is aimed at two groups of readers. The highlights, aimed at the general public, includes events and trends in the electric power industry between 1976 and 1981.

The remainder of the **EPA** is oriented to those technical users needing specific descriptive statistics on the electric power industry. It contains a synopsis of the fuels and techniques used to generate electric power, how much electric power was generated, its costs, sales, and related financial information.

In the public sector, the audience is composed of speechwriters, analysts, researchers, statisticians, and other professionals engaged in regulatory, policy, and programmatic areas for the Federal, State, and Local governments. The Congress and other legislative bodies may also be interested in the general trends related to electric power at the State and national levels. Much of the **EPA** data can be used to evaluate existing laws and statutes or to develop new laws. Public Service Commissions and other special government groups may share an interest in State level statistics. These groups may also wish to compare the performance of their States with that of other jurisdictions.

In the private sector, the **EPA's** audience includes any person concerned with the electric power industry. The majority of users would be the research and analysis staffs and ultimately the policy and decision makers of utilities. Financial and investment corporations, economic development organizations interested in new power plant construction, special interest groups, lobbyists, electric power associations, and the news media can all share in the data available through the **Electric Power Annual**.

Others that may have an interest in the **EPA** are universities, colleges, electric power equipment manufacturers, marketing groups, research and development organizations, and national strategic planning organizations.

Sources of Data

Data published in the **EPA** are compiled from five statistical forms filed by electric utilities monthly with the Energy Information Administration. The form numbers and titles appear in the table on the next page. For a description of the data submitted on each form, see Sections 1.1, 1.2, 1.3, 1.4 and 1.5 of the "Technical Notes."

Introduction (continued)

Coverage of Sources

The Federal Power Commission (FPC) Form 4 data source represents 100 percent coverage of electric utilities with generating plants. The remaining four data sources represent less than 100 percent coverage of their fields (see Table 1). The coverage for each form is described in Sections 1.1, 1.2, 1.3, 1.4 and 1.5 of the "Technical Notes."

The data summarized by North American Electric Reliability Council Region (NERC) in this publication are limited to that portion applicable to the contiguous United States, thereby excluding that portion of NERC data applicable to the provinces of Canada. A map showing NERC regions is included in Section 5 of the "Technical Notes." NERC regions cross State boundaries. Data from Alaska and Hawaii, which are not associated with a NERC region, are added to the contiguous United States' total to obtain the United States' total in all tables except those in the chapters on receipts; cost; retail prices; and sales, revenue, and income.

Adjustments to Collected Data

Data from the Federal Energy Regulatory Commission (FERC) Form 5 covers 83 percent of privately owned electric utilities. These data are factored out to estimate State and United States' totals for Table 72. (See Section 1.5 of the "Technical Notes.") No adjustments have been made to data collected in the remaining forms used in this publication. Procedures for obtaining a 100 percent response rate are described in Sections 1.1, 1.2, 1.3, 1.4, 1.5, and 2.4 of the "Technical Notes."

Glossary

A glossary of terms used in this report has been included to assist non technical as well as technical users in understanding and relating the statistical data in this publication. The use of these terms is described in Section 3 of the "Technical Notes."

Explanatory Notes

The Btu equivalents applied to the FPC Form 4 data are calculated using data obtained on FPC Form 423, whose sample is a subset of that for the FPC Form 4. Therefore, the Btu values indicated are approximations for the FPC Form 4 data. For the formulas used to calculate the Btu equivalents, refer to Section 2.8 of the "Technical Notes." The Btu averages for the contiguous United States are used as conversion factors for Alaska and Hawaii.

Technical Notes

The "Technical Notes" contains a detailed description of each data collection system used in preparing this publication.

The notes provide explanations of data quality, adjustments to collected data, conversion formulas, and critical differences in the data. Rules for rounding the data and a table of conversion factors are also included. Copies of the data are available to the public. See Section 4 of the "Technical Notes" for further information.

References

The "References" is a description of related publications. Reference numbers appear within the text in parentheses. References are located after the "Technical Notes."

Introduction (continued)

Table 1. Sources of Data and Coverage of Sources

Section of Publication	Sources of Data	Coverage	Reporting Cycle	EIA Technical Contacts
Installed Nameplate Net Generation Consumption Stocks	FPC Form 4, "Monthly Power Plant Report"	All electric utilities with generating plants, accounting for 100 percent of total electric utility generation.	Monthly	Melvin Johnson (202) 252-6520
Net Energy for Load Peak Load, Net Capability Projections	EP Form 119M, "Monthly Report of Electric Energy, Capability, and Peak Load"	Major electric systems accounting for approximately 96 percent of total electric utility generation.	Monthly	Dean Fennell (202) 252-6523
Receipts Cost	FPC Form 423, "Monthly Report of Cost and Quality of Fuels for Electric Plants"	Fossil-fuel plants with a combined capacity of 25 MW or greater, accounting for approximately 95 percent of electric utility fossil-fuel receipts.	Monthly	Hilary Salkov (202) 252-6525
Retail Prices	EIA 101, "Monthly Residential, Commercial and Industrial Electric Bill Data for the U.S. Bureau of Labor Statistics-Consumer and Producer Price Indexes"	Retail electric bills in major U. S. cities for representative amounts of electricity consumed in residential, commercial, and industrial service.	Monthly	Muriel Moorhead (202) 252-6521
Sales, Revenues and Income	FERC Form 5, "Electric Utility Company Monthly Statement"	Privately owned utilities with revenues over $100 million, and selected other utilities, accounting for approximately 83 percent of the industry.	Monthly	Tom Fred Woods (202) 252-5221

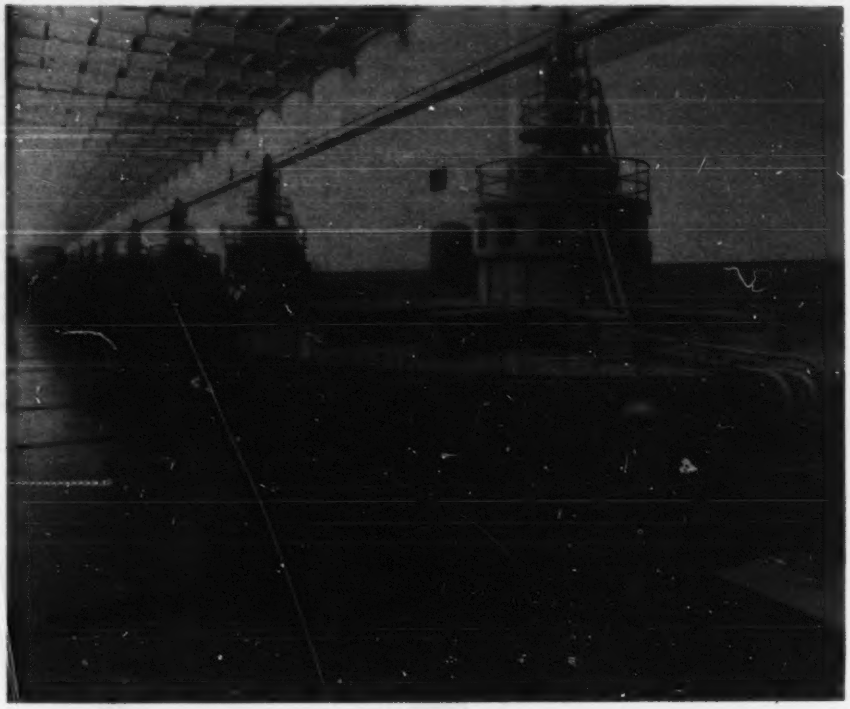
2. Installed Nameplate Capacity

The installed nameplate generating capacity of the Nation's electric utilities reached a record level of 634,808 megawatts (MW) at the end of 1981, an increase of 3.5 percent from December 31, 1980 when the installed nameplate capacity was 613,546 MW. This annual increase in capacity is the largest annual percentage increase since 1977 (5.5 percent).

In 1981, units fueled by nuclear power and fossil steam accounted for the greatest shares of the increase in installed capacity. The installed capacity fueled by nuclear power increased 7.6 percent during 1981; followed by fossil steam, 3.6 percent; gas turbine/internal combustion (GT/IC), 1.5 percent; and hydroelectric power, 1.0 percent.

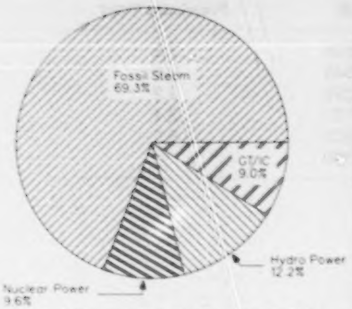
Fossil steam plants had the largest quantitative capacity increase in 1981, 15,364 MW; followed by nuclear power, 4,286 MW; GT/IC, 818 MW; and hydroelectric power, 794 MW. These figures reflect the electric utility industry's growing use of coal as a fuel source. The added nuclear capacity results from several nuclear plants beginning commercial operation after lengthy planning, construction, and licensing procedures.

The table on the next page details installed nameplate capacity between 1976 and 1981 by fuel type. It also shows the United States total and the percentage increases from year to year. The pie charts at the left illustrate each prime mover's share of installed nameplate capacity for 1981, 1980, and 1976.



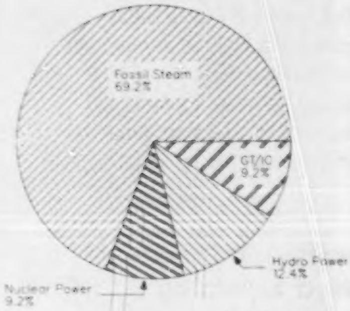
Installed Nameplate Capacity of Electric Utilities as of December 31

1981



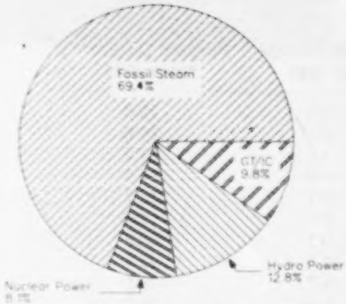
Note: "GT/IC" means gas turbine/internal combustion.
Source: Federal Power Commission Form 4.

1980



Note: "GT/IC" means gas turbine/internal combustion.
Source: Federal Power Commission Form 4.

1976



Note: "GT/IC" means gas turbine/internal combustion.
Source: Federal Power Commission Form 4.

Source: Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

Table 2. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover, as of December 31, 1976-1981

(Megawatts)

Year	Fossil Steam	Nuclear Power	Hydroelectric Power	Gas Turbine/ Internal Combustion	Total U.S.	Percent Increase from Previous Year
1981	439,888	60,776	77,145	56,999	634,808	3.5
1980	424,524	56,490	76,351	56,181	613,546	2.5
1979	412,324	54,594	75,326	56,054	598,298	3.3
1978	400,101	53,528	70,989	54,539	579,157	3.4
1977	388,373	49,882	68,734	53,214	560,202	5.5
1976	368,478	42,919	67,729	51,872	530,999	-

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Capacity By NERC Region

The North American Electric Reliability Council (NERC) Region with the highest amount of installed capacity at the end of 1981 was SERC, 129,948; followed by WSCC, 109,173; and ECAR, 102,538. SWPP produced the largest percentage increase in installed capacity during 1981 of 11.1 percent. Close behind was Hawaii with a 9.5 percent increase for 1981 while two NERC regions showed decreases in installed capacity for 1981: MAIN, 1.8 percent; and NPCC, 1.0 percent. Between 1976 and 1981, SWPP showed the highest percentage increase in installed capacity of 36.9 percent. It was followed by Alaska, which increased by 31.2 percent, and Hawaii, which increased by 26.8 percent.

Table 3. Installed Nameplate Generating Capacity of Electric Utilities in the United States by NERC Region, Alaska, and Hawaii, as of December 31, 1981

(Megawatts)

North American Electric Reliability Council Region, Alaska, and Hawaii	Installed Nameplate Capacity as of December 31, 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	102,538	1.1	19.0
ERCOT	45,379	2.7	24.6
MAAC	51,743	3.5	21.7
MAIN	47,574	-1.8	14.4
MARCA (U.S.)	30,701	5.1	20.7
NPCC (U.S.)	52,068	-1.0	1.2
SERC	129,948	5.1	20.3
SWPP	62,953	11.1	36.9
WSCC (U.S.)	109,173	4.2	19.5
Contiguous U.S.	**632,076**	**3.5**	**19.5**
Alaska	1,172	2.3	31.2
Hawaii	1,560	9.5	26.8
Total U.S.	**634,808**	**3.5**	**19.5**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Installation Nameplate Capacity (continued)

Capacity By Census Region

Among Census Regions, the South Atlantic region had the highest amount of installed capacity of 115,831 MW at the end of 1981. Close behind was the East North Central Region with 107,905 MW, with the West South Central region a distant third at 89,011 MW. During 1981, the Mountain region increased its percentage of installed capacity the most, 9.7 percent; while the East South Central region capacity increased 8.4 percent; and the Pacific noncontiguous region increased 6.3 percent.

Interestingly, the New England region actually decreased its capacity by 0.8 percent during 1981. Between 1976 and 1981, the West North Central region experienced the largest increase (34.5 percent) in its installed capacity. The next three regions (the Pacific Noncontiguous, West South Central, and Mountain) showed lesser percent increases of 28.7, 28.6, and 28.3 percent respectively, for the same period. Overall, installed nameplate capacity in the United States increased 19.5 percent between 1976 and 1981.

Table 4. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Census Region, as of December 31, 1981 (Megawatts)

Census Region	Installed Nameplate Capacity as of December 31, 1981	Percent Change from 1980	Percent Difference from 1976
New England	20,965	-0.8	0.1
Middle Atlantic	79,218	1.1	10.4
East North Central	107,905	*	15.3
West North Central	51,845	5.8	34.5
South Atlantic	115,831	3.9	19.2
East South Central	57,801	8.4	25.0
West South Central	89,011	5.1	28.6
Mountain	39,272	9.7	28.3
Pacific Contiguous	70,228	1.3	15.6
Pacific Noncontiguous	2,732	6.3	28.7
Total U.S.	**634,808**	**3.5**	**19.5**

* = increase or decrease less than 0.05 percent.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

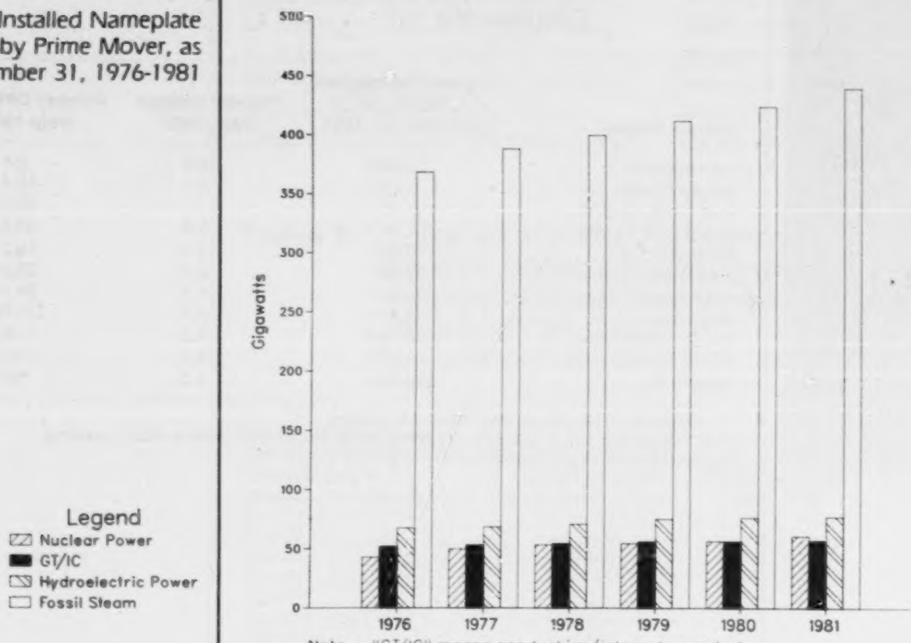
Table 5. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover, as of December 31, 1976-1981

(Megawatts)

Year	Total	Fossil Steam	Nuclear Power	Hydroelectric Power	Gas Turbine/Internal Combustion
1981	634,808	439,888	60,776	77,145	56,999
1980	613,546	424,524	56,490	76,351	56,181
1979	598,298	412,324	54,594	75,326	56,054
1978	579,157	400,101	53,528	70,989	54,539
1977	560,202	388,373	49,882	68,734	53,214
1976	530,999	368,478	42,919	67,729	51,872

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Figure 1. Installed Nameplate Capacity by Prime Mover, as of December 31, 1976-1981



Note : "GT/IC" means gas turbine/internal combustion.
Source : Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

Table 6. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover and by NERC Region, Alaska, and Hawaii, as of December 31, 1976-1981

(Megawatts)

1981

North American Electric Reliability Council Region, Alaska, and Hawaii	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustion	
	Number of Plants	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity
ECAR	306	102,538	148	89,047	6	5,157	79	3,657	137	4,677
ERCOT	108	45,379	75	43,133	–	–	16	282	40	1,964
MAAC	120	51,743	54	32,166	5	8,854	11	2,112	107	8,611
MAIN	221	47,574	74	35,477	5	7,301	68	888	112	3,909
MARCA(U.S.)	506	30,701	112	19,095	6	3,740	87	2,981	356	4,864
NPCC(U.S.)	418	52,068	76	29,943	11	8,530	251	7,656	135	5,939
SERC	327	129,948	118	82,881	13	21,451	156	13,081	118	12,534
SWPP	315	62,953	149	53,345	1	1,845	30	2,551	207	5,213
WSCC(U.S.)	635	109,173	120	53,444	6	3,897	433	43,807	124	8,025
Contiguous U.S.	**2956**	**632,076**	**926**	**438,530**	**53**	**60,776**	**1131**	**77,015**	**1336**	**55,755**
Alaska	93	1,172	3	68	–	–	14	127	84	977
Hawaii	15	1,560	8	1,290	–	–	2	3	10	266
Total U.S.	**3064**	**634,808**	**937**	**439,888**	**53**	**60,776**	**1147**	**77,145**	**1430**	**56,999**

1980

North American Electric Reliability Council Region, Alaska, and Hawaii	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustion	
	Number of Plants	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity
ECAR	306	101,462	149	88,138	6	5,157	79	3,552	136	4,616
ERCOT	109	44,192	75	41,940	–	–	17	284	41	1,968
MAAC	120	49,976	54	31,568	5	7,684	11	2,112	107	8,613
MAIN	226	48,435	78	36,283	5	7,301	68	891	114	3,960
MARCA(U.S.)	509	29,208	112	17,862	6	3,705	87	2,949	359	4,693
NPCC(U.S.)	420	52,597	76	30,162	11	8,778	251	7,687	138	5,969
SERC	325	123,669	118	79,912	11	18,122	156	13,081	119	12,554
SWPP	319	56,638	144	47,270	1	1,845	30	2,551	216	4,972
WSCC(U.S.)	625	104,798	117	50,168	6	3,897	427	43,115	123	7,618
Contiguous U.S.	**2959**	**610,975**	**923**	**423,301**	**51**	**56,490**	**1126**	**76,222**	**1353**	**54,963**
Alaska	93	1,146	3	68	–	–	14	126	85	952
Hawaii	15	1,425	8	1,155	–	–	2	3	10	266
Total U.S.	**3067**	**613,546**	**934**	**424,524**	**51**	**56,490**	**1142**	**76,351**	**1448**	**56,181**

1979

North American Electric Reliability Council Region, Alaska, and Hawaii	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustion	
	Number of Plants	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Primo Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity
ECAR	305	97,501	148	84,199	6	5,157	78	3,552	136	4,592
ERCOT	108	43,729	74	41,476	–	–	17	284	41	1,968
MAAC	112	46,996	48	29,135	5	7,684	11	2,112	100	8,065
MAIN	225	47,837	77	35,685	5	7,301	68	891	114	3,960
MARCA(U.S.)	523	30,975	117	18,864	6	3,705	87	2,949	373	5,457
NPCC(U.S.)	421	52,660	76	30,145	11	8,805	252	7,687	137	6,024
SERC	324	121,631	116	79,074	11	17,143	157	13,030	116	12,384
SWPP	318	52,795	143	44,370	1	902	30	2,551	217	4,972
WSCC(U.S.)	623	101,632	116	48,152	6	3,897	428	42,142	121	7,440
Contiguous U.S.	**2959**	**595,756**	**915**	**411,102**	**51**	**54,594**	**1129**	**75,197**	**1355**	**54,863**
Alaska	95	1,143	3	68	–	–	14	126	87	949
Hawaii	15	1,399	9	1,154	–	–	2	3	10	241
Total U.S.	**3069**	**598,298**	**927**	**412,324**	**51**	**54,594**	**1145**	**75,326**	**1452**	**56,054**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

Table. 6 Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover and by NERC Region, Alaska, and Hawaii, as of December 31, 1976-1981 (Continued)

(Megawatts)

1978

North American Electric Reliability Council Region, Alaska, and Hawaii	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustio	
	Number of Plants	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Namepla Capaci
ECAR	304	94,151	145	80,985	6	5,157	79	3,552	137	4,45
ERCOT	111	42,375	75	40,125	-	-	17	284	43	1,96
MAAC	112	47,038	48	29,135	5	7,684	11	2,112	100	8,10
MAIN	228	47,055	78	34,916	5	7,326	68	891	116	3,92
MARCA(U.S.)	526	27,807	117	16,082	6	3,720	87	2,947	375	5,05
NPCC(U.S.)	422	52,216	77	29,750	11	8,751	251	7,685	139	6,03
SERC	323	119,035	115	78,897	11	16,434	155	11,444	117	12,26
SWPP	323	50,880	141	42,620	1	902	30	2,545	223	4,81
WSCC(U.S.)	627	96,206	116	46,371	5	3,554	432	39,399	123	6,88
Contiguous U.S.	**2976**	**576,764**	**912**	**398,879**	**50**	**53,528**	**1130**	**70,859**	**1373**	**53,49**
Alaska	94	995	3	68	-	-	14	126	86	80
Hawaii	15	1,399	8	1,154	-	-	2	3	10	24
Total U.S.	**3085**	**579,157**	**923**	**400,101**	**50**	**53,528**	**1146**	**70,989**	**1489**	**54,53**

1977

North American Electric Reliability Council Region, Alaska, and Hawaii	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustio	
	Number of Plants	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Namepl Capaci
ECAR	306	91,806	148	79,839	6	3,968	79	3,552	136	4,44
ERCOT	110	39,303	74	37,054	-	-	17	284	43	1,96
MAAC	111	46,318	49	29,242	5	6,723	11	2,112	99	8,24
MAIN	223	45,113	79	33,384	5	7,301	69	891	111	3,53
MARCA(U.S.)	533	26,727	119	15,387	6	3,634	87	2,927	381	4,77
NPCC(U.S.)	422	52,256	79	29,972	11	8,546	251	7,689	139	6,04
SERC	319	114,846	114	76,093	10	15,313	154	10,919	116	12,52
SWPP	323	49,290	140	41,197	1	902	30	2,537	224	4,65
WSCC(U.S.)	624	92,223	114	44,983	5	3,494	431	37,693	121	6,05
Contiguous U.S.	**2971**	**557,882**	**916**	**387,151**	**49**	**49,882**	**1129**	**68,604**	**1370**	**52,24**
Alaska	95	927	3	68	-	-	14	126	87	73
Hawaii	15	1,393	8	1,154	-	-	2	3	10	23
Total U.S.	**3081**	**560,202**	**927**	**388,373**	**49**	**49,882**	**1145**	**68,734**	**1487**	**53,21**

1976

North American Electric Reliability Council Region, Alaska, and Hawaii	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combusti	
	Number of Plants	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Namepl Capaci
ECAR	309	86,140	157	75,122	5	3,027	79	3,551	139	4,44
ERCOT	113	36,422	73	34,159	-	-	17	284	50	1,97
MAAC	114	42,508	53	27,747	4	4,525	12	2,115	99	8,12
MAIN	216	41,593	81	29,923	5	7,301	68	892	110	3,47
MARCA(U.S.)	524	25,440	126	14,249	8	3,634	86	2,894	377	4,6
NPCC(U.S.)	419	51,435	80	29,133	11	8,520	252	7,686	139	6,09
SERC	321	107,985	117	73,622	9	11,515	154	10,598	117	12,24
SWPP	327	45,969	143	38,340	1	902	31	2,539	232	4,1
WSCC(U.S.)	626	91,385	123	45,096	5	3,494	433	37,042	121	5,75
Contiguous U.S.	**2969**	**528,875**	**953**	**367,391**	**48**	**42,919**	**1132**	**67,601**	**1384**	**50,9**
Alaska	96	893	4	68	-	-	15	125	91	69
Hawaii	15	1,230	9	1,019	-	-	2	3	10	20
Total U.S.	**3080**	**530,999**	**966**	**368,478**	**48**	**42,919**	**1149**	**67,729**	**1485**	**51,8**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

Table 7. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover and by Census Region, Alaska, and Hawaii, as of December 31, 1981

(Megawatts)

Census Region and State	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustion	
	Number of Plants	Installed Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity
New England	**241**	**20,965**	**42**	**12,244**	**6**	**4,462**	**136**	**2,691**	**86**	**1,568**
Connecticut	38	6,149	10	3,378	2	2,172	15	134	17	465
Maine	55	2,369	4	1,069	1	864	36	344	18	92
Massachusetts	66	9,656	18	6,413	2	863	26	1,639	31	741
New Hampshire	20	1,567	5	1,093	-	-	13	379	4	95
Rhode Island	7	284	3	256	-	-	1	2	4	26
Vermont	55	942	2	34	1	563	45	194	12	150
Middle Atlantic	**277**	**79,218**	**83**	**48,377**	**11**	**12,117**	**125**	**7,005**	**128**	**11,719**
New Jersey	30	13,741	14	6,427	2	2,890	2	389	26	4,035
New York	177	31,103	34	17,699	5	4,068	115	4,965	49	4,371
Pennsylvania	70	34,375	35	24,251	4	5,159	8	1,651	53	3,314
East North Central	**462**	**107,905**	**171**	**85,646**	**10**	**11,485**	**154**	**2,842**	**227**	**7,933**
Illinois	76	29,922	40	21,648	3	5,718	6	27	50	2,529
Indiana	43	16,944	31	16,090	-	-	6	93	17	761
Michigan	150	22,647	36	15,700	3	3,172	64	2,322	66	1,452
Ohio	57	27,352	37	24,581	1	962	1	2	45	1,808
Wisconsin	136	11,040	27	7,627	3	1,633	77	399	49	1,382
West North Central	**637**	**51,845**	**168**	**36,917**	**5**	**3,690**	**55**	**3,166**	**488**	**8,073**
Iowa	139	8,154	31	5,761	1	597	5	130	116	1,666
Kansas	102	8,569	35	6,990	-	-	1	2	89	1,577
Minnesota	139	8,805	39	5,434	2	1,755	23	142	99	1,474
Missouri	91	14,995	30	12,016	-	-	6	844	65	2,135
Nebraska	98	5,248	19	2,908	2	1,338	15	234	67	768
North Dakota	30	3,876	10	3,234	-	-	1	430	20	212
South Dakota	38	2,198	4	574	-	-	4	1,383	32	241
South Atlantic	**317**	**115,831**	**127**	**80,141**	**11**	**16,826**	**129**	**7,413**	**136**	**11,450**
Delaware	10	1,643	4	1,477	-	-	-	-	10	167
District of Columbia	2	1,103	2	815	-	-	-	-	1	288
Florida	65	30,019	44	21,266	3	3,260	2	30	51	5,462
Georgia	46	16,340	14	11,593	1	1,700	29	1,734	13	1,313
Maryland	20	9,841	11	6,321	1	1,828	2	494	15	1,198
North Carolina	60	17,565	14	11,867	2	2,953	40	1,847	13	898
South Carolina	48	12,301	12	5,029	2	3,430	26	2,264	18	1,579
Virginia	44	11,770	12	6,644	2	3,655	22	945	14	527
West Virginia	22	15,249	14	15,130	-	-	8	101	1	19
East South Central	**123**	**57,801**	**56**	**41,125**	**3**	**6,453**	**56**	**7,089**	**24**	**3,134**
Alabama	34	19,135	11	10,710	2	5,233	20	2,588	4	604
Kentucky	32	15,487	21	14,470	-	-	7	747	8	270
Mississippi	19	6,080	16	5,854	-	-	-	-	9	226
Tennessee	38	17,099	8	10,090	1	1,221	29	3,754	3	2,034
West South Central	**258**	**89,011**	**155**	**80,561**	**1**	**1,845**	**41**	**2,567**	**121**	**4,039**
Arkansas	34	7,987	12	4,697	1	1,845	11	1,086	13	359
Louisiana	41	13,976	31	13,694	-	-	-	-	23	283
Oklahoma	42	12,112	19	10,176	-	-	10	966	29	971
Texas	141	54,935	93	51,995	-	-	20	515	56	2,426
Mountain	**285**	**39,272**	**79**	**27,551**	**1**	**343**	**159**	**8,089**	**77**	**3,289**
Arizona	29	10,916	14	7,023	-	-	11	2,111	13	1,782
Colorado	62	6,242	19	4,390	1	343	27	869	21	640
Idaho	38	1,978	-	-	-	-	35	1,918	4	59
Montana	31	3,183	6	1,028	-	-	22	2,066	4	89
Nevada	22	4,127	7	2,972	-	-	6	682	13	474
New Mexico	22	4,988	17	4,784	-	-	1	24	10	180
Utah	56	2,580	8	2,331	-	-	44	199	6	50
Wyoming	25	5,258	8	5,023	-	-	13	220	6	15
Pacific	**356**	**70,229**	**45**	**25,970**	**5**	**3,554**	**276**	**36,153**	**49**	**4,551**
California	230	38,176	37	23,674	3	1,478	172	9,781	35	3,242
Oregon	60	8,707	5	849	1	1,216	50	5,886	5	756
Washington	66	23,346	3	1,447	1	860	54	20,486	8	552
Pacific Noncontiguous	**108**	**2,732**	**11**	**1,358**	**-**	**-**	**16**	**131**	**94**	**1,243**
Alaska	93	1,172	3	68	-	-	14	127	84	977
Hawaii	15	1,560	8	1,290	-	-	2	3	10	266
Total U.S.	**3,064**	**634,808**	**937**	**439,888**	**53**	**60,776**	**1,147**	**77,145**	**1,430**	**56,999**

Note: Totals may not equal sum of components because of independent rounding

Source: Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

Table 7. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover and by Census Region, Alaska, and Hawaii, as of December 31, 1980 (continued)

(Megawatts)

Census Region and State	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustion	
	Number of Plants	Installed Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity
New England	**242**	**21,132**	**42**	**12,426**	**6**	**4,435**	**135**	**2,692**	**89**	**1,579**
Connecticut	37	6,314	10	3,544	2	2,172	14	134	17	465
Maine	57	2,379	4	1,069	1	864	36	344	21	102
Massachusetts	66	9,646	18	6,430	2	836	25	1,640	31	741
New Hampshire	20	1,567	5	1,093	–	–	13	379	4	95
Rhode Island	7	284	3	256	–	–	1	2	4	26
Vermont	55	942	2	34	1	563	45	104	12	150
Middle Atlantic	**277**	**78,391**	**83**	**48,425**	**11**	**11,222**	**125**	**7,005**	**128**	**11,739**
New Jersey	30	12,582	14	6,438	2	1,720	2	389	26	4,035
New York	177	31,434	34	17,736	5	4,343	115	4,965	49	4,391
Pennsylvania	70	34,375	35	24,251	4	5,159	8	1,651	53	3,314
East North Central	**463**	**107,866**	**173**	**85,658**	**10**	**11,485**	**154**	**2,846**	**227**	**7,877**
Illinois	77	29,947	41	21,664	3	5,718	6	30	51	2,535
Indiana	43	17,105	31	16,317	–	–	6	93	17	695
Michigan	150	22,692	37	15,764	3	3,172	64	2,322	65	1,435
Ohio	57	27,400	37	24,606	1	962	1	2	45	1,830
Wisconsin	136	10,722	27	7,308	3	1,633	77	399	49	1,382
West North Central	**645**	**49,004**	**168**	**34,558**	**5**	**3,655**	**56**	**3,163**	**494**	**7,628**
Iowa	140	7,267	32	5,064	1	597	5	130	115	1,477
Kansas	106	8,346	35	6,789	–	–	1	2	93	1,555
Minnesota	140	8,755	39	5,393	2	1,755	24	140	100	1,467
Missouri	91	13,840	30	11,092	–	–	6	844	64	1,903
Nebraska	96	5,142	18	2,843	2	1,303	15	234	86	763
North Dakota	31	3,448	10	2,804	–	–	1	430	21	214
South Dakota	41	2,206	4	574	–	–	4	1,383	35	249
South Atlantic	**316**	**111,496**	**127**	**77,111**	**10**	**15,606**	**129**	**7,308**	**137**	**11,471**
Delaware	10	1,643	4	1,477	–	–	–	–	10	167
District of Columbia	2	1,153	2	865	–	–	–	–	1	288
Florida	64	28,992	44	20,221	3	3,260	2	30	51	5,480
Georgia	46	16,340	14	11,593	1	1,700	29	1,734	13	1,313
Maryland	20	9,182	11	5,661	1	1,829	2	494	15	1,200
North Carolina	60	15,601	14	11,122	1	1,733	40	1,847	14	900
South Carolina	48	11,671	12	4,399	2	3,430	26	2,264	18	1,579
Virginia	44	11,665	12	6,644	2	3,655	22	840	14	527
West Virginia	22	15,249	14	15,130	–	–	8	101	1	19
East South Central	**121**	**53,305**	**55**	**38,738**	**2**	**4,344**	**56**	**7,089**	**24**	**3,134**
Alabama	34	18,247	11	10,710	2	4,344	20	2,588	4	604
Kentucky	31	13,649	20	12,632	–	–	7	747	8	270
Mississippi	19	5,532	16	5,306	–	–	–	–	9	226
Tennessee	37	15,878	8	10,090	0	0	29	3,754	3	2,034
West South Central	**264**	**84,657**	**154**	**76,140**	**1**	**1,845**	**42**	**2,569**	**129**	**4,103**
Arkansas	34	7,187	12	3,897	1	1,845	11	1,086	13	359
Louisiana	41	12,856	30	12,576	–	–	–	–	24	280
Oklahoma	46	11,344	19	9,381	–	–	10	965	34	998
Texas	143	53,270	93	50,287	–	–	21	517	58	2,466
Mountain	**281**	**35,799**	**76**	**24,185**	**1**	**343**	**157**	**7,984**	**78**	**3,288**
Arizona	28	9,366	13	5,473	–	–	11	2,111	13	1,782
Colorado	61	6,142	19	4,390	1	343	26	769	21	640
Idaho	39	1,977	–	–	–	–	35	1,916	5	62
Montana	31	3,183	6	1,028	–	–	22	2,066	4	88
Nevada	21	3,857	6	2,702	–	–	6	682	13	474
New Mexico	22	5,024	17	4,825	–	–	1	24	10	175
Utah	55	2,132	8	1,885	–	–	43	197	6	50
Wyoming	24	4,118	7	3,883	–	–	13	220	6	15
Pacific	**350**	**69,325**	**45**	**26,060**	**5**	**3,554**	**272**	**35,566**	**47**	**4,144**
California	225	37,828	37	23,764	3	1,478	168	9,393	35	3,192
Oregon	60	8,507	5	849	1	1,216	50	5,687	5	756
Washington	65	22,990	3	1,447	1	860	54	20,486	7	196
Pacific Noncontiguous	**108**	**2,571**	**11**	**1,223**	–	–	**16**	**129**	**95**	**1,219**
Alaska	93	1,146	3	68	–	–	14	126	85	952
Hawaii	15	1,425	8	1,155	–	–	2	3	10	266
Total U.S.	**3,067**	**613,546**	**934**	**424,524**	**51**	**56,490**	**1,142**	**76,351**	**1,448**	**56,181**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

Table 7. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover and by Census Region, Alaska, and Hawaii, as of December 31, 1979 (continued)

(Megawatts)

Census Region and State	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustion	
	Number of Plants	Installed Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity
New England	**243**	**21,180**	**42**	**12,425**	**6**	**4,482**	**136**	**2,691**	**89**	**1,602**
Connecticut	37	6,313	10	3,543	2	2,172	14	134	17	465
Maine	58	2,385	4	1,069	1	864	37	345	21	107
Massachusetts	68	9,690	18	6,430	2	883	26	1,639	31	759
New Hampshire	20	1,567	5	1,093	–	–	13	379	4	95
Rhode Island	7	284	3	256	–	–	1	2	4	26
Vermont	55	942	2	34	1	563	45	194	12	150
Middle Atlantic	**277**	**77,251**	**82**	**47,048**	**11**	**11,222**	**125**	**7,005**	**127**	**11,976**
New Jersey	30	12,340	13	5,991	2	1,720	2	389	26	4,240
New York	177	31,450	34	17,720	5	4,343	115	4,965	48	4,422
Pennsylvania	70	33,461	35	23,337	4	5,159	8	1,651	53	3,314
East North Central	**462**	**106,837**	**172**	**84,342**	**10**	**11,485**	**154**	**2,846**	**227**	**7,864**
Illinois	77	29,946	41	21,663	3	5,718	6	30	51	2,535
Indiana	43	17,133	31	16,362	–	–	6	93	17	678
Michigan	150	21,916	37	14,994	3	3,172	64	2,322	65	1,428
Ohio	57	27,407	37	24,613	1	962	1	2	45	1,830
Wisconsin	135	10,125	26	6,711	3	1,633	77	399	49	1,382
West North Central	**652**	**47,228**	**168**	**32,767**	**5**	**3,655**	**56**	**3,163**	**502**	**7,644**
Iowa	147	7,305	33	5,091	1	597	5	130	122	1,487
Kansas	106	7,621	35	6,069	–	–	1	2	93	1,551
Minnesota	140	8,237	39	4,876	2	1,755	24	140	100	1,467
Missouri	92	13,849	30	11,092	–	–	6	844	65	1,913
Nebraska	96	5,143	18	2,843	2	1,303	15	234	66	764
North Dakota	30	2,867	9	2,223	–	–	1	430	21	214
South Dakota	41	2,206	4	574	–	–	4	1,383	35	249
South Atlantic	**316**	**107,631**	**125**	**74,446**	**10**	**14,626**	**130**	**7,257**	**134**	**11,302**
Delaware	10	1,644	4	1,477	–	–	–	–	10	167
District of Columbia	2	1,241	2	953	–	–	–	–	1	288
Florida	63	27,996	43	19,358	3	3,260	2	30	50	5,348
Georgia	46	16,235	14	11,593	1	1,700	29	1,682	12	1,260
Maryland	20	9,182	11	5,661	1	1,828	2	494	15	1,200
North Carolina	61	15,782	14	11,302	1	1,733	41	1,847	14	900
South Carolina	48	11,696	12	4,399	2	3,430	26	2,264	18	1,604
Virginia	44	10,693	12	6,662	2	2,675	22	840	13	517
West Virginia	21	13,161	13	13,042	–	–	8	101	1	19
East South Central	**120**	**52,916**	**54**	**38,348**	**2**	**4,344**	**56**	**7,089**	**24**	**3,134**
Alabama	34	18,104	11	10,567	2	4,344	20	2,588	4	604
Kentucky	30	13,401	19	12,385	–	–	7	747	8	270
Mississippi	19	5,532	16	5,306	–	–	–	–	9	226
Tennessee	37	15,878	8	10,090	–	–	29	3,754	3	2,034
West South Central	**260**	**80,986**	**152**	**73,498**	**1**	**902**	**42**	**2,569**	**128**	**4,017**
Arkansas	33	5,430	11	3,082	1	902	11	1,086	13	359
Louisiana	40	12,854	30	12,576	–	–	–	–	24	278
Oklahoma	46	10,340	19	8,377	–	–	10	965	34	998
Texas	141	52,362	92	49,462	–	–	21	517	57	2,382
Mountain	**282**	**34,323**	**76**	**22,993**	**1**	**343**	**159**	**7,766**	**78**	**3,220**
Arizona	28	9,366	13	5,473	–	–	11	2,111	13	1,782
Colorado	60	5,446	18	3,694	1	343	26	769	21	640
Idaho	40	1,759	–	–	–	–	36	1,698	5	62
Montana	31	3,183	6	1,028	–	–	22	2,066	4	89
Nevada	21	3,786	6	2,702	–	–	6	682	13	403
New Mexico	22	4,513	17	4,310	–	–	1	24	10	178
Utah	55	2,132	8	1,885	–	–	43	197	6	50
Wyoming	25	4,138	8	3,903	–	–	13	220	6	15
Pacific	**348**	**67,718**	**44**	**25,236**	**5**	**3,554**	**272**	**34,811**	**46**	**4,115**
California	224	37,496	37	23,500	3	1,478	168	9,355	34	3,163
Oregon	59	7,947	4	288	1	1,216	50	5,687	5	756
Washington	65	22,272	3	1,447	1	860	54	19,769	7	196
Pacific Noncontiguous	**110**	**2,542**	**12**	**1,222**	**–**	**–**	**16**	**129**	**97**	**1,191**
Alaska	95	1,143	3	68	–	–	14	126	87	949
Hawaii	15	1,399	9	1,154	–	–	2	3	10	241
Total U.S.	**3,069**	**598,298**	**927**	**412,324**	**51**	**54,594**	**1,145**	**75,326**	**1,452**	**56,054**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

Table 7. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover and by Census Region, Alaska, and Hawaii, as of December 31, 1978 (continued)

(Megawatts)

Census Region and State	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combusti	
	Number of Plants	Installed Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Namepl Capaci
New England	243	20,817	43	12,115	6	4,408	135	2,690	90	1,50
Connecticut	37	6,313	10	3,543	2	2,172	14	134	17	46
Maine	56	2,024	5	759	1	810	37	345	21	11
Massachusetts	66	9,690	18	6,430	2	863	25	1,636	32	75
New Hampshire	20	1,567	5	1,093	–	–	13	379	4	9
Rhode Island	7	284	3	256	–	–	1	2	4	2
Vermont	55	840	2	34	1	563	45	193	12	15
Middle Atlantic	276	77,031	82	46,785	11	11,222	125	7,005	128	12,01
New Jersey	30	12,382	13	5,991	2	1,720	2	369	26	4,28
New York	176	31,369	34	17,635	5	4,343	115	4,985	49	4,42
Pennsylvania	70	33,280	35	23,160	4	5,159	8	1,651	53	3,31
East North Central	455	102,718	170	80,067	10	11,525	154	2,846	230	7,88
Illinois	79	29,244	41	20,972	3	5,718	6	30	52	2,53
Indiana	43	15,732	30	15,097	–	–	6	93	17	54
Michigan	149	21,007	36	14,104	3	3,172	64	2,322	66	1,41
Ohio	58	26,964	37	24,170	1	962	1	2	45	1,83
Wisconsin	136	9,772	26	6,324	3	1,673	77	399	50	1,37
West North Central	656	43,607	168	29,703	5	3,655	56	3,161	507	7,08
Iowa	148	6,549	34	4,467	1	597	5	130	123	1,35
Kansas	105	6,802	34	5,369	–	–	1	2	93	1,41
Minnesota	140	8,102	40	4,881	2	1,755	24	137	98	1,41
Missouri	94	13,827	31	11,108	–	–	6	844	67	1,87
Nebraska	94	3,871	16	1,603	2	1,303	15	235	66	73
North Dakota	26	2,199	8	1,673	–	–	1	430	20	8
South Dakota	47	2,168	5	581	–	–	4	1,383	40	28
South Atlantic	313	105,988	123	73,688	10	13,917	129	7,204	134	11,17
Delaware	10	1,644	4	1,477	–	–	–	–	10	16
District of Columbia	2	1,241	2	953	–	–	–	–	1	28
Florida	63	27,973	43	19,358	3	3,260	2	30	49	5,32
Georgia	44	15,155	13	11,416	1	850	28	1,630	12	1,28
Maryland	20	9,162	11	5,661	1	1,826	2	494	15	1,20
North Carolina	61	15,782	14	11,302	1	1,733	41	1,847	14	90
South Carolina	49	11,736	12	4,399	2	3,571	26	2,264	19	1,50
Virginia	44	10,693	12	6,662	2	2,675	22	840	13	51
West Virginia	20	12,581	12	12,462	–	–	8	101	1	1
East South Central	120	51,432	54	38,398	2	4,344	55	5,555	25	3,13
Alabama	34	18,104	11	10,567	2	4,344	20	2,588	4	60
Kentucky	30	13,451	19	12,435	–	–	7	747	8	27
Mississippi	20	5,532	16	5,306	–	–	–	–	10	22
Tennessee	36	14,345	8	10,090	–	–	28	2,221	3	2,03
West South Central	266	78,579	152	70,951	1	902	42	2,564	134	4,16
Arkansas	33	5,425	11	3,062	1	902	11	1,081	13	35
Louisiana	41	12,864	30	12,576	–	–	–	–	25	28
Oklahoma	48	9,789	18	7,808	–	–	10	965	37	1,01
Texas	144	50,502	93	47,484	–	–	21	517	59	2,50
Mountain	287	32,476	75	21,700	0	0	162	7,769	80	3,00
Arizona	28	8,948	13	5,083	–	–	11	2,111	13	1,75
Colorado	59	4,704	17	3,294	0	0	26	769	22	64
Idaho	41	1,762	–	–	–	–	37	1,700	5	6
Montana	31	3,144	6	1,026	–	–	22	2,066	3	5
Nevada	22	3,649	6	2,702	–	–	6	682	14	26
New Mexico	23	4,512	17	4,320	–	–	1	24	10	16
Utah	57	2,133	8	1,885	–	–	45	197	7	5
Wyoming	26	3,625	8	3,389	–	–	14	220	6	1
Pacific	348	64,115	45	24,872	5	3,554	272	32,064	45	3,62
California	224	36,674	37	23,116	3	1,478	168	9,340	34	2,74
Oregon	59	7,947	4	288	1	1,216	50	5,687	5	79
Washington	65	19,495	4	1,468	1	860	54	17,038	6	13
Pacific Noncontiguous	109	2,393	11	1,222	–	–	16	129	96	1,04
Alaska	94	995	3	68	–	–	14	126	86	80
Hawaii	15	1,399	8	1,154	–	–	2	3	10	2
Total U.S.	3,085	579,157	923	400,101	50	53,528	1,146	70,989	1,489	54,5

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Installed Nameplate Capacity (continued)

Table 7. Installed Nameplate Generating Capacity of Electric Utilities in the United States by Prime Mover and by Census Region, Alaska, and Hawaii, as of December 31, 1977 (continued)

(Megawatts)

Census Region and State	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbine/ Internal Combustion	
	Number of Plants	Installed Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity
New England	**243**	**20,938**	**45**	**12,234**	**6**	**4,405**	**135**	**2,890**	**90**	**1,609**
Connecticut	37	6,385	10	3,605	2	2,172	14	134	17	475
Maine	58	1,744	5	459	1	830	37	345	21	110
Massachusetts	66	10,022	20	6,787	2	840	25	1,638	32	756
New Hampshire	20	1,567	5	1,083	–	–	13	379	4	95
Rhode Island	7	281	3	256	–	–	1	2	4	23
Vermont	55	940	2	34	1	563	45	193	12	150
Middle Atlantic	**277**	**76,153**	**83**	**46,915**	**11**	**10,059**	**125**	**7,009**	**127**	**12,170**
New Jersey	29	12,623	14	6,098	2	1,720	2	389	25	4,417
New York	178	31,287	34	17,738	5	4,141	115	4,969	49	4,440
Pennsylvania	70	32,243	35	23,080	4	4,198	8	1,651	53	3,314
East North Central	**464**	**99,089**	**172**	**78,488**	**10**	**10,300**	**155**	**2,847**	**228**	**7,454**
Illinois	79	28,506	42	20,233	3	5,718	6	30	52	2,524
Indiana	43	15,090	31	14,458	–	–	6	93	17	539
Michigan	149	19,626	36	13,867	3	2,039	64	2,322	65	1,399
Ohio	58	26,900	37	24,163	1	906	1	2	45	1,830
Wisconsin	135	8,968	26	5,768	3	1,638	78	400	49	1,162
West North Central	**658**	**42,260**	**170**	**29,078**	**5**	**3,579**	**56**	**3,161**	**509**	**6,441**
Iowa	150	5,612	34	3,720	1	566	5	130	126	1,196
Kansas	106	6,792	34	5,389	–	–	1	2	94	1,402
Minnesota	144	8,132	41	4,900	2	1,755	24	137	101	1,340
Missouri	89	13,494	31	11,108	–	–	8	844	62	1,541
Nebraska	95	3,926	16	1,699	2	1,258	15	235	67	734
North Dakota	28	2,175	8	1,673	–	–	1	430	20	71
South Dakota	47	2,128	6	589	–	–	4	1,383	39	156
South Atlantic	**312**	**103,053**	**125**	**72,126**	**9**	**12,797**	**128**	**6,693**	**133**	**11,438**
Delaware	10	1,644	4	1,477	–	–	–	–	10	167
District of Columbia	2	1,241	2	953	–	–	0	0	1	288
Florida	63	27,677	43	18,801	3	3,260	2	30	48	5,585
Georgia	44	14,203	13	10,464	1	850	28	1,630	12	1,260
Maryland	21	9,123	12	5,602	1	1,828	2	494	15	1,199
North Carolina	61	15,782	14	11,302	1	1,733	41	1,847	14	900
South Carolina	48	11,089	13	4,404	2	3,430	25	1,753	19	1,503
Virginia	43	9,713	12	6,662	1	1,695	22	840	13	517
West Virginia	20	12,581	12	12,462	–	–	8	101	1	19
East South Central	**119**	**49,688**	**53**	**36,666**	**2**	**4,344**	**55**	**5,542**	**25**	**3,135**
Alabama	33	17,159	10	9,627	2	4,344	20	2,584	4	604
Kentucky	31	13,022	20	12,005	–	–	7	747	8	270
Mississippi	19	5,172	15	4,948	–	–	–	–	10	226
Tennessee	36	14,336	8	10,090	–	–	28	2,212	3	2,034
West South Central	**265**	**73,978**	**150**	**66,438**	**1**	**902**	**42**	**2,556**	**135**	**4,082**
Arkansas	32	4,907	10	2,570	1	902	11	1,076	13	359
Louisiana	42	12,920	30	12,621	–	–	–	–	26	299
Oklahoma	48	9,247	18	7,269	–	–	10	963	37	1,016
Texas	143	46,904	92	43,978	–	–	21	517	59	2,409
Mountain	**285**	**31,220**	**74**	**20,358**	**0**	**0**	**161**	**7,536**	**80**	**3,026**
Arizona	29	8,704	13	4,820	–	–	11	2,105	14	1,778
Colorado	59	4,687	18	3,305	0	0	25	741	22	642
Idaho	41	1,697	–	–	–	–	37	1,635	5	62
Montana	31	3,010	8	1,028	–	–	22	1,932	3	50
Nevada	21	3,644	8	2,702	–	–	6	682	13	261
New Mexico	23	4,495	17	4,303	–	–	1	24	10	168
Utah	56	1,686	7	1,439	–	–	45	197	7	51
Wyoming	25	3,297	7	3,062	–	–	14	220	6	15
Pacific	**347**	**61,502**	**44**	**24,546**	**5**	**3,494**	**272**	**30,571**	**43**	**2,890**
California	223	35,527	37	22,966	3	1,478	168	9,077	32	2,006
Oregon	59	7,770	3	112	1	1,216	90	5,687	5	756
Washington	65	18,204	4	1,468	1	800	54	15,806	6	126
Pacific Noncontiguous	**110**	**2,320**	**11**	**1,222**	**–**	**–**	**16**	**129**	**97**	**966**
Alaska	95	927	3	68	–	–	14	126	87	733
Hawaii	15	1,393	8	1,154	–	–	2	3	10	238
Total U.S.	**3,081**	**560,202**	**927**	**388,373**	**49**	**49,882**	**1,145**	**68,734**	**1,467**	**53,214**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

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Installed Nameplate Capacity (continued)

Table 7. Installed Nameplate Generating Capacity of Electr Utilities in the United States by Prime Mover and I Census Region, Alaska, and Hawaii as of December 31, 1976 (continued)

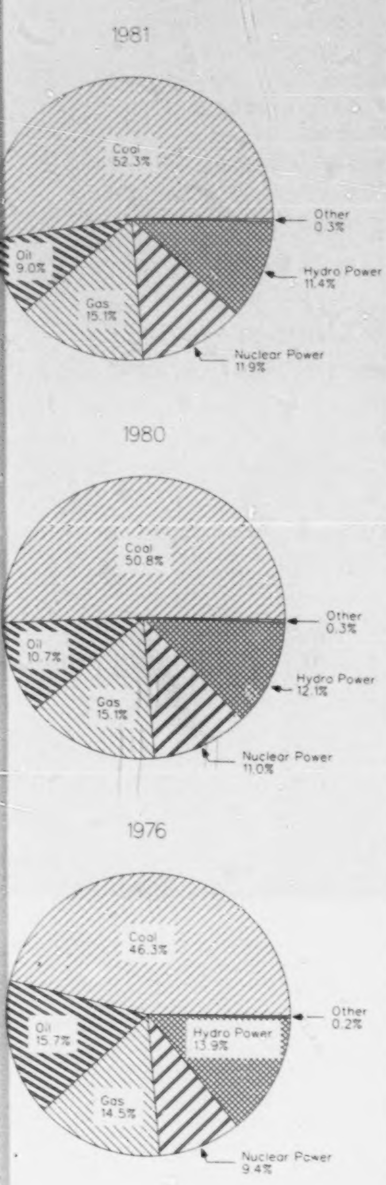
(Megawatts)

Census Region and State	Total		Fossil Steam		Nuclear Power		Hydroelectric Power		Gas Turbi Internal Com
	Number of Plants	Installed Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers	Nameplate Capacity	Number of Prime Movers
New England	**238**	**20,940**	**47**	**12,273**	**6**	**4,379**	**136**	**2,687**	**88**
Connecticut	37	6,540	11	3,759	2	2,172	14	134	17
Maine	59	1,745	5	459	1	830	39	346	20
Massachusetts	65	9,902	21	6,671	2	840	26	1,642	30
New Hampshire	20	1,567	5	1,093	–	–	13	379	4
Rhode Island	7	281	3	256	–	–	1	2	4
Vermont	50	906	2	34	1	537	43	186	13
Middle Atlantic	**284**	**71,750**	**85**	**43,775**	**10**	**8,854**	**125**	**7,009**	**131**
New Jersey	30	11,348	14	6,098	1	550	2	389	25
New York	180	30,465	33	16,860	5	4,141	115	4,969	51
Pennsylvania	74	29,937	38	20,817	4	4,163	8	1,651	55
East North Central	**458**	**93,623**	**183**	**73,947**	**9**	**9,384**	**153**	**2,845**	**229**
Illinois	76	26,344	42	18,087	3	5,718	6	30	52
Indiana	44	14,592	34	13,959	–	–	6	93	17
Michigan	145	19,035	36	13,281	3	2,039	63	2,321	65
Ohio	62	24,717	42	22,880	–	–	1	2	46
Wisconsin	131	8,935	29	5,740	3	1,638	77	398	49
West North Central	**653**	**38,555**	**177**	**25,831**	**7**	**3,579**	**57**	**3,131**	**508**
Iowa	153	5,359	37	3,535	3	566	5	130	128
Kansas	106	6,053	35	4,706	–	–	1	2	97
Minnesota	137	7,374	41	4,180	2	1,755	24	136	98
Missouri	89	12,002	31	9,822	–	–	7	846	62
Nebraska	92	3,921	16	1,703	2	1,258	15	235	65
North Dakota	26	1,709	9	1,240	–	–	1	400	18
South Dakota	50	2,135	8	645	–	–	4	1,383	40
South Atlantic	**316**	**97,175**	**129**	**69,584**	**9**	**10,011**	**130**	**6,448**	**133**
Delaware	10	1,644	5	1,477	–	–	–	–	10
District of Columbia	2	1,244	2	953	–	–	1	3	1
Florida	63	24,854	44	17,158	2	2,370	2	30	48
Georgia	48	13,953	14	10,463	2	850	28	1,380	12
Maryland	21	8,164	13	5,683	1	800	2	494	15
North Carolina	61	14,916	14	11,302	1	867	41	1,847	14
South Carolina	47	10,774	13	4,089	2	3,430	25	1,753	19
Virginia	44	9,730	12	6,862	1	1,696	23	842	13
West Virginia	20	11,897	12	11,778	–	–	8	101	1
East South Central	**116**	**46,224**	**54**	**35,317**	**1**	**2,304**	**54**	**5,468**	**26**
Alabama	32	15,152	12	9,663	1	2,304	20	2,581	4
Kentucky	29	12,119	20	11,164	–	–	6	686	8
Mississippi	18	4,627	14	4,400	–	–	–	–	10
Tennessee	37	14,326	8	10,090	–	–	28	2,201	4
West South Central	**271**	**69,237**	**152**	**61,930**	**1**	**902**	**42**	**2,556**	**145**
Arkansas	31	4,906	10	2,570	1	902	11	1,076	13
Louisiana	42	12,681	33	12,383	–	–	–	–	26
Oklahoma	51	8,469	19	6,738	–	–	10	963	38
Texas	147	43,181	90	40,238	–	–	21	517	68
Mountain	**285**	**30,607**	**81**	**20,150**	**0**	**0**	**162**	**7,536**	**82**
Arizona	30	8,704	13	4,820	–	–	13	2,105	15
Colorado	58	4,579	19	3,303	0	0	25	741	21
Idaho	41	1,697	–	–	–	–	37	1,635	5
Montana	31	2,954	6	972	–	–	22	1,932	3
Nevada	22	3,645	5	2,897	–	–	6	682	15
New Mexico	23	4,490	18	4,304	–	–	1	24	10
Utah	55	1,241	10	992	–	–	44	196	7
Wyoming	25	3,297	9	3,062	–	–	14	220	6
Pacific	**348**	**60,764**	**45**	**24,604**	**5**	**3,494**	**273**	**29,922**	**42**
California	224	34,879	36	22,965	3	1,478	170	8,576	30
Oregon	56	7,721	3	112	1	1,216	49	5,638	5
Washington	68	18,164	6	1,527	1	800	54	15,707	7
Pacific Noncontiguous	**111**	**2,123**	**13**	**1,087**	–	–	**17**	**129**	**101**
Alaska	96	893	4	68	–	–	15	125	91
Hawaii	15	1,230	9	1,019	–	–	2	3	10
Total U.S.	**3,080**	**530,999**	**966**	**368,478**	**48**	**42,919**	**1,149**	**67,729**	**1,485**

Note: Totals may nc: equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

3. Net Electric Energy Generation

Electric Utility Net Generation by Type of Fuel



Source: Federal Power Commission Form 4.

The net generation of electricity by utilities in the United States reached 2,294,812 gigawatthours (GWh) during 1981, an increase of 0.4 percent from 1980 when 2,286,439 GWh were generated. Net generation for 1981 is also 12.6 percent above the 1976 level of 2,037,696 GWh (see table below). The percent increase from 1980 to 1981 continues a trend begun in the mid-1970's when annual increases were markedly below the 6 to 7 percent annual generation increases experienced by electric utilities prior to 1973.

During 1981, utilities also continued their trend of using cheaper fuels to produce electricity. A majority of the units that went into commercial operation during the year burn coal at a lower price than either oil or natural gas for creating steam. Utilities also continued to convert oil- and gas-fired units to burn coal in a further effort to cut fuel costs.

The fuel mix used by electric utilities has changed somewhat in the past few years as a result of these trends. While generation from coal increased during 1981, generation from nuclear power was also increasing. The increases were mostly a result of the decreased use of oil and gas-fired units and coal conversions. Generation from hydroelectric power decreased while the generation from "other" (this designation contains geothermal, wood, waste, and petroleum coke) increased 8.4 percent during 1981.

During 1981, coal accounted for 52.4 percent of the total net generation of electricity by U.S. utilities. Natural gas accounted for 15.1 percent, nuclear power for 11.9 percent, hydroelectric power for 11.4 percent, oil for 9.0 percent, while the remaining 0.3 percent came from geothermal, wood, waste, and petroleum coke. The pie charts at the left illustrate the gradual changes in fuel use taking place among electric utilities. The pie charts depict each fuel's percent share of net generation for 1981, 1980, and 1976.

Table 8. Net Generation by Electric Utilities in the United States by Fuel Type in 1981
(Gigawatthours)

Fuel type	Net generation in 1981	Percent change from 1980	Percent Difference from 1976
Coal	1,203,203	3.6	27.4
Natural Gas	345,777	*	17.4
Nuclear	272,674	8.6	42.7
Hydroelectric	260,684	-5.6	-8.1
Oil	206,070	-16.1	-35.6
Other[1]	6,405	8.4	57.4
Total U.S.	**2,294,812**	**0.4**	**12.6**

* = increase or decrease less than 0.05 percent.
[1] Other includes geothermal, wood, waste, and petroleum coke.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Generation By NERC Region

The North American Electric Reliability Council Region (NERC) with the highest amount of net generation at the end of 1981 was SERC, 464,353; followed by WSCC, 439,327; and ECAR, 404,004. SWPP produced the largest percentage increase in net generation during 1981 of 5.4 percent. Five NERC regions showed percentage decreases in net generation in 1981. MAIN showed the greatest percentage decrease of 7.1 percent, while MAAC showed a 5.0 percent decrease. Between 1976 and 1981, ERCOT showed the highest percentage increase in net generation of 34.4 percent. It was followed by SWPP, which increased by 30.0 percent, and Alaska, which increased by 26.0 percent. Two NERC regions decreased their net generation between 1976 and 1981; NPCC decreased 1.1 percent and MAIN decreased 0.1 percent.

Table 9. Net Generation by Electric Utilities in the United States by NERC Region, Alaska, and Hawaii in 1981
(Gigawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	Net Generation in 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	404,004	1.8	8.5
ERCOT	164,868	1.6	34.4
MAAC	153,789	-5.0	5.7
MAIN	162,115	-7.1	-0.1
MARCA (U.S.)	101,506	-0.2	8.5
NPCC (U.S.)	182,743	-2.2	-1.1
SERC	464,353	-0.3	16.1
SWPP	212,360	5.4	30.0
WSCC (U.S.)	439,327	3.3	14.2
Contiguous U.S.	**2,285,064**	**0.4**	**12.6**
Alaska	3,188	3.2	26.0
Hawaii	6,560	0.8	12.7
Total U.S.	**2,294,812**	**0.4**	**12.6**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Generation By Census Region

Among Census Regions in 1981, the South Atlantic Region recorded the highest net generation level of 424,019 GWh. Close behind was the East North Central Region with 391,046 GWh while the West South Central Region was third with 320,750 GWh. The Mountain Region showed the greatest percentage increase in net generation for 1981, 6.4 percent from 1980. The East South Central Region showed the greatest percentage decrease from 1980, 2.6 percent. Since 1976, the Mountain Region has increased its generation the most, 35.4 percent. The West South Central and West North Central Regions also reported substantial increases of 29.9 and 18.1 percent respectively. The smallest percentage increase from 1976 was the New England Region, 1.4 percent. The table below shows net generation by Census Region for 1981, the percent change from 1980, and the percent difference from 1976.

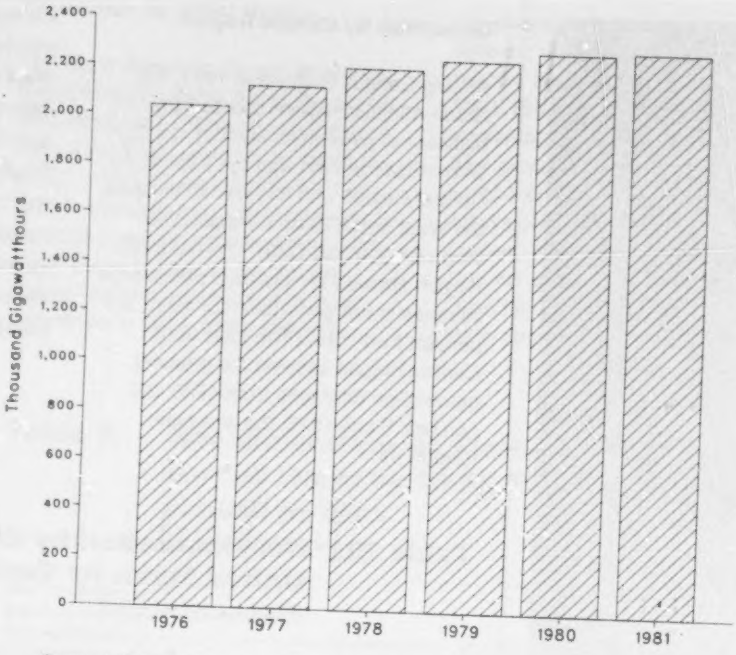
Table 10. Net Generation by Electric Utilities in the United States by Census Region in 1981
(Gigawatthours)

Census Region	Net Generation in 1981	Percent Change from 1980	Percent Difference from 1976
New England	76,911	-1.7	1.4
Middle Atlantic	254,155	-2.4	2.0
East North Central	391,046	-1.5	4.6
West North Central	167,538	-0.4	18.1
South Atlantic	424,019	1.5	14.8
East South Central	208,624	-2.6	12.0
West South Central	320,750	2.5	29.9
Mountain	169,005	6.4	35.4
Pacific Contiguous	273,017	1.4	4.6
Pacific Noncontiguous	9,748	1.6	16.7
Total U.S.	**2,294,812**	**0.4**	**12.6**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Figure 2. Net Generation in the United States, 1976-1981



Source : Federal Power Commission Form 4.

Table 11. Net Generation by Electric Utilities in the United States by Prime Mover, 1976-1981

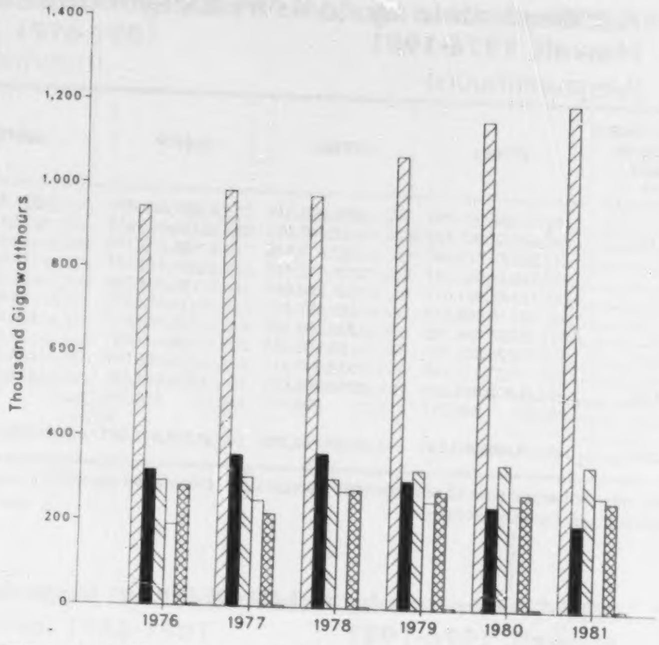
(Megawatthours)

Type of Fuel	1981	1980	1979	1978	1977	1976
Coal Steam	1,203,203,232	1,161,562,368	1,075,037,091	975,742,083	985,218,596	944,390,993
Oil Steam	201,392,687	237,844,102	289,656,118	343,781,766	337,500,287	301,985,580
Gas Steam	325,393,004	326,149,097	310,899,001	289,671,584	292,263,264	283,714,308
Total Fossil Steam	**1,729,988,922**	**1,725,555,567**	**1,675,592,210**	**1,609,195,433**	**1,614,982,147**	**1,530,090,882**
Oil GT/IC	4,676,849	7,745,219	13,305,500	20,393,396	20,414,207	17,816,091
Gas GT/IC	20,384,169	20,090,803	18,586,106	15,719,252	13,241,595	10,909,602
Total Fossil GT/IC	**25,061,018**	**27,836,022**	**31,891,606**	**36,112,648**	**33,655,802**	**28,725,693**
Nuclear	272,673,503	251,115,575	255,154,623	276,403,070	250,883,283	191,103,531
Hydroelectric	260,683,544	276,020,970	279,782,812	280,418,878	220,474,515	283,707,054
Other	6,405,231	5,911,110	4,950,611	4,200,536	4,327,568	4,069,336
Total	**2,294,812,218**	**2,286,439,244**	**2,247,371,861**	**2,206,330,565**	**2,124,323,316**	**2,037,696,497**

Note: Totals may not be equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Figure 3. Net Generation by Coal, Oil, Gas, Nuclear Power, Hydroelectric Power, and Other, 1976-1981.



Source : Federal Power Commission Form 4.

Table 12. Total Net Generation by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	404,004,132	397,043,268	399,228,228	373,107,319	377,392,317	372,376,443
ERCOT	164,867,870	162,225,927	150,343,662	147,804,174	137,074,249	122,656,775
MAAC	153,789,226	161,944,632	158,602,044	163,511,588	154,575,875	145,546,764
MAIN	162,115,212	174,536,709	177,107,231	176,126,140	168,615,164	162,269,174
MARCA(U.S.)	101,505,894	101,758,108	105,576,688	102,804,329	97,530,536	93,597,759
NPCC(U.S.)	182,742,654	186,884,142	183,675,090	192,961,960	188,929,507	184,806,426
SERC	464,352,503	465,812,355	449,063,116	439,313,842	430,498,007	400,089,721
SWPP	212,359,884	201,445,910	188,403,203	196,280,157	180,074,532	163,389,910
WSCC(U.S.)	439,326,527	425,188,959	425,920,799	405,251,848	380,801,934	384,613,987
Contiguous U.S.	**2,285,063,903**	**2,276,840,008**	**2,237,920,061**	**2,197,161,357**	**2,115,492,120**	**2,029,346,959**
Alaska	3,188,276	3,090,321	3,027,577	2,907,845	2,771,328	2,529,657
Hawaii	6,560,040	6,508,914	6,424,223	6,261,363	6,059,867	5,819,881
Total U.S.	**2,294,812,218**	**2,286,439,244**	**2,247,371,861**	**2,206,330,565**	**2,124,323,316**	**2,037,696,497**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

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Net Electric Energy Generation (continued)

Table 13. Net Generation by Coal-Fired Steam Units by NERC Region, Alaska, an Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	369,097,589	366,280,315	361,622,670	331,431,296	346,481,122	344,061,638
ERCOT	59,687,498	52,440,019	39,893,435	27,373,756	18,093,235	14,945,618
MAAC	87,715,465	92,912,519	86,273,773	79,441,391	77,173,079	81,285,874
MAIN	114,054,487	125,412,445	124,613,127	117,521,836	119,018,640	114,964,410
MARCA(U.S.)	67,901,017	66,269,666	58,226,760	55,412,152	54,130,484	47,134,386
NPCC(U.S.)	18,869,876	19,007,415	16,852,071	15,835,332	17,406,817	15,617,313
SERC	281,088,132	275,499,197	248,492,912	228,689,375	236,819,486	233,493,675
SWPP	76,632,760	51,135,466	35,417,051	31,506,750	21,196,627	13,791,848
WSCC(U.S.)	127,811,199	112,308,517	103,330,787	88,201,729	94,595,790	78,777,918
Contiguous U.S.	**1,202,858,021**	**1,161,265,561**	**1,074,724,586**	**975,413,616**	**984,915,279**	**944,072,681**
Alaska	345,211	296,807	312,505	328,467	303,317	318,313
Hawaii	–	–	–	–	–	–
Total U.S.	**1,203,203,232**	**1,161,562,368**	**1,075,037,091**	**975,742,083**	**985,218,596**	**944,390,993**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 14. Net Generation by Oil-Fired Steam Units by NERC Region, Alaska, an Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	4,456,246	7,238,700	10,708,993	16,115,700	10,928,955	9,699,033
ERCOT	642,441	815,377	2,339,474	3,151,027	1,889,519	1,479,566
MAAC	21,981,848	26,657,702	30,235,233	40,150,373	37,218,640	30,611,879
MAIN	5,494,459	7,250,837	7,280,787	7,606,714	5,588,216	3,938,168
MARCA(U.S.)	233,802	438,808	5,320,676	7,201,690	5,952,531	6,052,398
NPCC(U.S.)	77,464,466	84,463,852	82,639,351	96,172,951	92,786,722	91,626,756
SERC	51,879,163	53,482,225	60,274,551	68,065,147	62,578,748	67,410,993
SWPP	5,111,484	10,406,873	20,111,962	35,079,098	32,744,606	22,052,558
WSCC(U.S.)	28,004,507	41,018,415	64,713,066	64,360,758	82,086,477	63,568,098
Contiguous U.S.	**195,268,417**	**231,772,789**	**283,624,094**	**337,903,458**	**331,754,415**	**296,439,450**
Alaska	761	1,048	596	296	1,187	4,994
Hawaii	6,123,508	6,070,265	6,031,429	5,878,012	5,744,685	5,541,137
Total U.S.	**201,392,687**	**237,844,102**	**289,658,118**	**343,781,766**	**337,500,287**	**301,985,580**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 15. Net Generation by Gas-Fired Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	1,252,475	1,206,533	1,581,546	1,177,291	907,758	2,049,505
ERCOT	99,987,085	104,656,585	104,633,463	113,253,985	113,251,979	104,130,633
MAAC	7,030,359	6,676,237	3,020,103	222,217	687,871	1,133,906
MAIN	749,878	1,378,254	3,021,803	1,883,228	854,112	2,636,138
MARCA(U.S.)	815,364	1,713,049	1,939,119	1,431,603	2,323,212	4,039,940
NPCC(U.S.)	11,718,221	10,693,019	6,858,132	212,189	584,084	670,887
SERC	16,426,371	15,197,028	16,054,653	15,564,419	13,735,480	12,617,003
SWPP	114,149,512	123,556,595	117,100,184	114,087,277	113,051,684	115,491,181
WSCC(U.S.)	73,225,793	61,043,848	56,660,579	41,811,187	46,817,314	40,908,844
Contiguous U.S.	**325,355,059**	**326,121,149**	**310,869,583**	**289,643,396**	**292,213,495**	**283,678,038**
Alaska	37,945	27,948	29,418	28,188	49,769	36,270
Hawaii	-	-	-	-	-	-
Total U.S.	**325,393,004**	**326,149,097**	**310,899,001**	**289,671,584**	**292,263,264**	**283,714,308**

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 4.

Table 16. Net Generation by Fossil-Fired Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	374,806,311	374,725,549	373,913,208	348,724,287	358,317,835	355,810,176
ERCOT	160,317,025	157,911,981	146,866,372	143,778,769	133,234,734	120,555,817
MAAC	116,727,672	126,246,458	119,529,108	119,813,980	115,079,591	113,031,658
MAIN	120,298,824	134,041,537	134,915,717	127,011,778	125,440,967	121,538,717
MARCA(U.S.)	68,950,182	68,421,524	65,488,556	64,045,445	62,406,227	57,226,724
NPCC(U.S.)	108,052,562	114,164,286	106,349,555	112,220,472	110,777,623	107,914,957
SERC	349,393,666	344,178,450	324,822,116	312,318,941	313,133,713	313,521,671
SWPP	195,893,756	185,008,934	172,629,197	180,673,125	166,992,917	151,335,588
WSCC(U.S.)	229,041,499	214,370,780	224,704,432	194,373,673	223,499,582	183,254,860
Contiguous U.S.	**1,723,481,497**	**1,719,159,498**	**1,669,218,262**	**1,602,960,469**	**1,608,833,189**	**1,524,190,168**
Alaska	383,917	325,803	342,520	356,952	354,273	359,577
Hawaii	6,123,508	6,070,265	6,031,429	5,878,012	5,744,685	5,541,137
Total U.S.	**1,729,988,922**	**1,725,555,567**	**1,675,592,210**	**1,609,195,433**	**1,614,982,147**	**1,530,090,882**

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 17. Net Generation by Oil-Fired Gas Turbine/Internal Combustion Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	259,656	597,912	1,476,935	2,775,633	2,598,397	2,651,931
ERCOT	39,037	66,256	88,661	63,772	105,573	41,146
MAAC	937,520	1,837,708	1,740,656	2,811,651	3,142,710	2,474,057
MAIN	90,645	281,345	1,386,741	2,002,258	1,733,504	1,573,328
MARCA(U.S.)	14,618	89,497	722,137	1,245,017	874,718	1,038,021
NPCC(U.S.)	491,329	553,878	783,970	881,418	1,575,932	2,160,290
SERC	1,472,491	1,884,942	3,085,367	6,619,094	6,941,841	5,240,669
SWPP	124,291	322,867	572,458	1,156,980	936,837	989,106
WSCC(U.S.)	490,032	1,287,730	2,663,851	2,063,985	1,825,418	1,070,967
Contiguous U.S.	**3,919,619**	**6,922,133**	**12,520,776**	**19,619,808**	**19,734,929**	**17,239,514**
Alaska	349,766	404,193	412,438	410,583	410,035	349,159
Hawaii	407,464	418,893	372,286	363,005	269,243	227,418
Total U.S.	**4,676,849**	**7,745,219**	**13,305,500**	**20,393,396**	**20,414,207**	**17,816,091**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 18. Net Generation by Gas-Fired Gas Turbine/Internal Combustion Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	661,680	1,146,654	1,225,009	1,315,389	1,105,257	1,551,876
ERCOT	3,729,808	3,694,463	2,892.725	3,495,952	3,020,424	1,461,361
MAAC	1,245,905	1,429,913	415,766	36,925	94,432	69,088
MAIN	560,692	852,642	880,912	555,856	566,984	668,032
MARCA(U.S.)	311,901	437,158	1,020,489	405,116	552,144	849,498
NPCC(U.S.)	643,831	648,893	349,093	12,749	43,888	51,178
SERC	1,238,387	1,777,989	1,567,307	1,283,059	879,583	596,281
SWPP	4,263,157	4,263,101	4,034,963	3,853,613	2,645,905	2,476,829
WSCC(U.S.)	5,864,526	4,018,617	4,385,771	3,092,171	2,837,988	1,748,000
Contiguous U.S.	**18,519,887**	**18,269,429**	**16,772,034**	**14,050,830**	**11,746,605**	**9,472,143**
Alaska	1,864,282	1,821,374	1,814,071	1,668,421	1,494,990	1,437,460
Hawaii	–	–	–	–	–	–
Total U.S.	**20,384,169**	**20,090,803**	**18,586,106**	**15,719,252**	**13,241,595**	**10,909,602**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 19. Net Generation by Gas Turbine/Internal Combustion Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	921,336	1,744,566	2,701,945	4,091,022	3,703,653	4,203,806
ERCOT	3,768,845	3,760,719	2,981,386	3,559,724	3,125,997	1,502,507
MAAC	2,183,425	3,267,621	2,156,422	2,848,576	3,237,142	2,543,145
MAIN	651,337	1,133,987	2,267,653	2,558,114	2,300,488	2,241,360
MARCA(U.S.)	326,519	526,654	1,742,626	1,650,133	1,426,862	1,887,519
NPCC(U.S.)	1,135,160	1,202,771	1,133,063	894,166	1,619,819	2,211,468
SERC	2,710,878	3,662,930	4,652,674	7,902,154	7,821,424	5,836,949
SWPP	4,387,448	4,585,968	4,607,421	5,010,593	3,582,742	3,465,935
WSCC(U.S.)	6,354,558	5,306,347	7,049,622	5,156,157	4,663,406	2,818,967
Contiguous U.S.	**22,439,506**	**25,191,582**	**29,292,810**	**33,670,638**	**31,481,534**	**26,711,656**
Alaska	2,214,048	2,225,567	2,226,510	2,079,005	1,905,025	1,786,619
Hawaii	407,464	418,893	372,286	363,005	269,243	227,418
Total U.S.	**25,061,018**	**27,836,022**	**31,891,606**	**36,112,648**	**33,655,802**	**28,725,693**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 20. Net Generation by Nuclear Powered Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	26,460,015	18,620,560	20,323,529	18,406,138	13,650,877	10,370,663
ERCOT	–	–	–	–	–	–
MAAC	32,486,450	30,054,543	33,059,359	37,516,827	32,709,622	26,229,967
MAIN	38,961,456	37,439,165	37,665,324	44,469,467	39,402,571	37,003,877
MARCA(U.S.)	18,619,414	18,586,365	23,252,044	20,699,655	21,591,993	18,386,262
NPCC(U.S.)	43,229,064	41,725,832	45,237,003	49,729,110	46,119,468	40,842,494
SERC	91,421,242	83,834,003	74,661,728	86,389,632	73,176,201	45,097,832
SWPP	9,074,612	7,832,566	3,873,435	5,220,121	5,084,866	3,857,556
WSCC(U.S.)	12,421,250	13,022,540	17,082,201	13,972,120	19,147,686	9,314,680
Contiguous U.S.	**272,673,503**	**251,115,575**	**255,154,623**	**276,403,070**	**250,883,283**	**191,103,531**
Alaska	–	–	–	–	–	–
Hawaii	–	–	–	–	–	–
Total U.S.	**272,673,503**	**251,115,575**	**255,154,623**	**276,403,070**	**250,883,283**	**191,103,531**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 21. Net Generation by Hydroelectric Powered Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	1,816,327	1,951,359	2,286,170	1,885,022	1,718,981	1,991,077
ERCOT	782,000	553,226	495,904	465,681	713,518	598,451
MAAC	2,054,111	2,021,714	3,422,422	2,576,564	3,336,987	3,560,937
MAIN	2,195,179	1,902,048	2,226,220	2,067,406	1,471,136	1,485,220
MARCA(U.S.)	13,530,546	14,147,722	15,064,071	16,395,663	12,080,436	16,055,563
NPCC(U.S.)	30,299,079	29,729,304	30,851,964	30,107,228	30,411,504	33,837,508
SERC	20,826,718	34,136,972	44,926,598	32,703,116	36,366,669	35,633,269
SWPP	2,928,832	3,801,403	7,103,369	5,153,164	4,268,264	4,632,546
WSCC(U.S.)	185,646,719	187,218,514	172,925,036	188,572,799	129,574,962	185,507,095
Contiguous U.S.	**260,079,510**	**275,462,263**	**279,303,756**	**279,926,643**	**219,942,460**	**283,301,665**
Alaska	590,311	538,951	458,548	471,889	512,030	383,461
Hawaii	13,723	19,756	20,508	20,346	20,025	21,929
Total U.S.	**260,683,544**	**276,020,970**	**279,782,812**	**280,418,878**	**220,474,515**	**283,707,054**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 22. Net Generation by Other Types of Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	143	1,234	1,376	850	972	720
ERCOT	-	-	-	-	-	-
MAAC	337,568	354,295	434,733	755,640	212,533	181,057
MAIN	8,415	19,973	32,316	19,374	0	0
MARCA(U.S.)	79,233	75,643	29,390	13,434	25,016	41,691
NPCC(U.S.)	26,789	61,949	103,505	10,983	1,092	0
SERC	-	-	-	-	-	0
SWPP	75,237	127,039	189,782	223,155	145,743	98,265
WSCC(U.S.)	5,862,501	5,270,778	4,159,509	3,177,099	3,916,298	3,718,165
Contiguous U.S.	**6,389,887**	**5,911,110**	**4,950,611**	**4,200,536**	**4,301,654**	**4,039,938**
Alaska	-	-	-	-	-	-
Hawaii	15,344	0	0	0	25,914	29,398
Total U.S.	**6,405,231**	**5,911,110**	**4,950,611**	**4,200,536**	**4,327,568**	**4,069,336**

Note: Totals may not equal sum of components because of independent rounding. Other includes solar and geothermal generation, and generation from wood, waste, petroleum coke, and wind.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 23. Total Net Generation by Census Region and State, 1976-1981
(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**76,911,015**	**78,201,944**	**78,257,974**	**79,740,225**	**76,277,840**	**75,853,210**
Connecticut	23,778,755	24,698,491	23,876,926	25,820,043	24,733,230	24,184,220
Maine	9,251,736	7,902,559	7,467,989	8,207,727	7,867,419	9,048,223
Massachusetts	32,930,904	34,845,507	35,768,357	36,262,800	33,374,085	32,868,905
New Hampshire	5,562,764	5,971,467	6,147,293	4,811,570	5,249,932	4,925,434
Rhode Island	818,868	963,604	594,692	562,424	564,822	511,422
Vermont	4,567,987	3,820,316	4,402,718	4,075,661	4,488,353	4,315,005
Middle Atlantic	**254,155,177**	**260,534,015**	**259,635,023**	**266,039,915**	**259,788,809**	**249,157,304**
New Jersey	31,730,249	29,424,940	26,552,780	30,339,172	30,394,981	25,257,454
New York	105,831,640	108,598,799	105,318,361	113,121,167	112,573,814	108,949,102
Pennsylvania	116,593,289	122,510,275	127,763,882	122,579,577	116,820,014	114,950,748
East North Central	**391,046,231**	**396,973,234**	**404,753,680**	**389,654,293**	**378,954,913**	**373,871,430**
Illinois	98,871,264	103,419,886	104,646,229	106,805,714	100,647,161	98,351,340
Indiana	67,766,471	70,618,372	67,035,261	62,196,223	63,196,770	62,410,674
Michigan	75,594,999	74,849,550	78,229,558	74,534,339	68,757,517	69,252,984
Ohio	111,754,308	110,246,859	116,797,143	109,217,425	110,157,180	108,719,085
Wisconsin	37,059,189	37,838,566	38,045,489	36,900,592	36,196,287	35,137,347
West North Central	**167,537,718**	**168,180,360**	**162,482,666**	**158,714,513**	**151,523,010**	**141,814,504**
Iowa	22,616,662	21,805,483	20,279,817	17,587,629	18,218,776	17,727,569
Kansas	24,544,102	25,134,033	23,609,986	24,622,046	20,931,164	19,331,117
Minnesota	31,502,039	31,537,418	30,969,719	32,703,268	33,243,393	28,401,077
Missouri	48,801,047	48,930,024	47,125,848	45,873,468	45,965,576	42,771,888
Nebraska	16,063,400	16,313,062	17,416,778	15,213,782	14,866,198	13,291,243
North Dakota	16,060,601	15,829,009	13,878,944	12,907,764	10,342,300	10,335,504
South Dakota	7,949,868	8,631,330	9,201,573	9,806,558	7,955,603	9,956,106
South Atlantic	**424,018,519**	**417,776,403**	**404,784,966**	**397,404,765**	**387,806,653**	**369,478,736**
Delaware	8,320,408	6,662,322	6,977,917	7,047,603	6,530,707	6,303,656
District of Columbia	357,760	698,606	1,035,640	1,780,295	1,780,129	1,257,499
Florida	98,999,463	95,902,246	93,995,042	92,023,566	86,891,847	81,494,931
Georgia	61,923,319	63,307,872	56,191,659	52,525,337	51,496,496	46,562,468
Maryland	30,143,547	32,173,882	34,055,768	35,130,380	33,612,292	31,234,695
North Carolina	72,003,666	72,069,253	68,158,013	63,332,705	63,571,625	61,215,300
South Carolina	41,249,682	41,858,344	41,622,391	42,348,208	39,398,401	37,829,302
Virginia	37,480,527	34,306,111	34,990,181	41,234,890	38,207,252	37,087,210
West Virginia	73,540,148	70,797,766	67,758,356	61,981,781	66,317,904	66,503,676
East South Central	**208,623,794**	**214,110,466**	**206,805,963**	**202,833,370**	**205,365,998**	**186,303,181**
Alabama	74,774,188	78,291,716	76,691,076	69,268,879	72,726,031	54,390,398
Kentucky	60,095,015	57,108,189	54,763,874	55,615,853	56,556,369	57,326,366
Mississippi	14,797,940	18,499,649	16,640,079	19,009,395	16,486,852	14,124,859
Tennessee	58,956,650	60,210,912	58,710,934	58,939,242	59,596,746	60,461,558
West South Central	**320,749,932**	**313,054,605**	**292,613,407**	**294,069,819**	**271,977,987**	**247,002,515**
Arkansas	25,307,821	19,685,015	16,794,160	17,669,319	15,582,095	12,202,632
Louisiana	44,110,308	45,744,334	46,654,568	51,504,383	48,438,279	45,132,575
Oklahoma	44,075,147	44,636,021	41,617,558	40,841,671	36,487,525	35,114,746
Texas	207,256,656	202,989,236	187,547,121	184,054,445	171,470,089	154,552,563
Mountain	**169,004,727**	**158,784,126**	**150,448,290**	**137,454,340**	**134,768,865**	**124,799,700**
Arizona	40,575,080	36,876,113	34,896,705	29,569,282	29,967,168	26,342,645
Colorado	25,403,759	23,638,236	22,516,682	20,993,608	20,503,522	18,097,749
Idaho	9,508,060	9,511,386	9,205,761	9,876,032	6,807,651	10,381,378
Montana	16,593,038	15,495,785	15,756,412	16,749,550	13,473,220	16,091,433
Nevada	15,724,253	14,122,548	14,729,832	12,940,076	15,790,057	14,076,967
New Mexico	23,016,675	24,676,729	20,499,620	19,576,515	21,623,502	19,939,776
Utah	11,761,358	12,112,246	10,788,078	8,627,184	6,827,672	4,063,674
Wyoming	26,422,504	22,351,083	22,055,200	19,122,092	19,756,074	15,786,080
Pacific	**273,016,790**	**269,224,856**	**278,138,093**	**271,250,117**	**249,028,045**	**261,066,379**
California	129,985,936	140,340,670	151,977,652	138,473,919	138,869,041	120,735,619
Oregon	40,381,739	36,558,954	35,325,518	33,637,503	31,227,823	37,510,613
Washington	102,649,115	92,325,232	90,834,923	99,138,695	78,931,180	102,820,147
Pacific Noncontiguous	**9,748,315**	**9,599,235**	**9,451,800**	**9,169,208**	**8,831,196**	**8,349,538**
Alaska	3,188,276	3,090,321	3,027,577	2,907,845	2,771,328	2,529,657
Hawaii	6,560,040	6,508,914	6,424,223	6,261,363	6,059,867	5,819,881
Total U.S.	**2,294,812,218**	**2,286,439,244**	**2,247,371,881**	**2,206,330,585**	**2,124,323,316**	**2,037,696,497**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 24. Net Generation by Coal-Fired Steam Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**4,467,538**	**4,538,656**	**2,889,777**	**1,965,926**	**2,523,280**	**1,972,119**
Connecticut	-	-	9,149	17,530	9,161	9,988
Maine	-	-	-	-	-	0
Massachusetts	2,249,700	1,792,252	122,486	0	0	0
New Hampshire	2,197,015	2,733,476	2,739,885	1,939,427	2,495,820	1,951,214
Rhode Island	0	0	0	0	0	0
Vermont	20,822	12,928	18,257	8,970	18,299	10,917
Middle Atlantic	**113,329,899**	**119,530,363**	**114,920,295**	**102,093,159**	**105,140,562**	**107,858,070**
New Jersey	6,981,331	6,424,640	5,608,334	5,521,916	6,538,571	6,701,150
New York	14,402,338	14,468,759	13,962,295	13,869,406	14,883,537	13,645,195
Pennsylvania	91,946,231	98,636,964	95,349,667	82,701,837	83,718,454	87,511,724
East North Central	**314,160,375**	**318,737,708**	**318,551,171**	**295,558,004**	**303,367,704**	**300,105,598**
Illinois	62,985,383	66,910,511	66,448,545	63,451,002	64,436,709	64,307,740
Indiana	66,423,576	69,635,197	65,686,937	59,543,401	61,650,617	60,876,940
Michigan	53,182,672	50,450,279	51,363,534	47,613,638	47,624,077	46,813,611
Ohio	106,761,770	106,802,281	111,364,855	103,446,758	107,012,145	106,509,271
Wisconsin	24,806,974	24,939,440	23,687,301	21,503,205	22,644,156	21,598,035
West North Central	**129,066,124**	**125,162,536**	**109,455,881**	**104,718,722**	**99,180,871**	**87,803,263**
Iowa	19,136,055	17,754,323	15,561,427	14,439,388	13,090,255	12,202,634
Kansas	17,586,682	16,210,876	12,566,188	12,417,647	7,693,479	6,227,537
Minnesota	20,025,528	20,065,602	17,642,524	19,104,344	20,347,540	16,197,531
Missouri	47,401,317	46,915,203	43,605,165	41,347,945	42,623,153	39,430,586
Nebraska	8,481,517	8,122,082	6,026,588	4,664,389	4,492,598	3,918,863
North Dakota	13,773,414	13,286,258	11,040,294	9,838,193	8,300,661	7,038,106
South Dakota	2,661,611	2,808,191	2,813,695	2,905,816	2,633,185	2,788,006
South Atlantic	**261,739,564**	**249,498,933**	**228,013,316**	**204,184,015**	**211,935,196**	**207,270,121**
Delaware	4,408,515	2,173,856	2,122,308	1,834,931	1,776,689	1,937,908
District of Columbia	-	-	-	-	-	0
Florida	21,096,470	19,737,678	18,227,948	15,746,341	15,196,105	13,513,712
Georgia	51,790,133	49,672,409	45,079,183	40,654,431	38,925,992	33,242,090
Maryland	12,782,188	14,568,377	13,459,888	12,390,598	11,122,398	12,884,806
North Carolina	62,566,418	60,463,223	53,229,279	46,969,209	52,131,514	52,635,754
South Carolina	21,082,922	19,521,730	16,727,902	15,353,926	15,184,224	13,458,588
Virginia	15,380,331	13,363,875	12,354,480	10,474,482	12,135,078	13,922,207
West Virginia	72,632,587	69,957,784	66,812,329	60,760,097	65,463,196	65,675,057
East South Central	**156,716,872**	**156,698,088**	**144,030,495**	**140,945,807**	**145,963,935**	**147,727,929**
Alabama	44,889,333	45,240,526	41,995,402	37,369,939	42,074,156	40,087,905
Kentucky	57,071,219	53,883,045	50,671,274	52,194,224	53,069,246	54,041,107
Mississippi	6,606,841	6,957,618	5,270,728	3,592,216	3,334,893	3,772,629
Tennessee	48,149,478	50,616,899	46,093,091	47,789,428	47,485,641	49,826,287
West South Central	**95,570,082**	**74,704,677**	**53,481,695**	**37,855,364**	**22,154,086**	**15,473,598**
Arkansas	9,475,613	2,940,294	2,402,195	1,508,616	0	-
Louisiana	1,529,230	-	-	-	-	-
Oklahoma	13,660,972	9,710,725	4,715,735	3,369,044	714,174	0
Texas	70,904,267	62,053,659	46,363,765	32,776,704	21,439,912	15,473,598
Mountain	**119,144,382**	**104,540,891**	**95,936,084**	**82,080,749**	**86,527,120**	**69,756,130**
Arizona	28,122,486	21,701,317	20,086,477	14,454,565	16,092,484	13,069,302
Colorado	22,171,566	18,593,638	17,516,109	16,416,970	16,226,647	12,926,959
Idaho	-	-	-	-	-	-
Montana	5,046,906	5,139,625	5,114,223	4,870,876	4,787,918	3,557,796
Nevada	9,548,831	7,755,488	8,310,566	7,496,392	10,197,133	9,710,903
New Mexico	17,885,459	19,331,819	14,638,235	13,612,878	14,814,545	13,140,122
Utah	10,868,699	10,869,790	9,407,897	7,238,437	5,532,887	2,714,516
Wyoming	25,500,432	21,149,215	20,860,577	17,990,631	18,873,507	14,636,530
Pacific	**8,663,185**	**7,853,708**	**7,445,872**	**6,211,870**	**8,122,525**	**6,105,854**
California	-	-	-	-	-	-
Oregon	1,678,628	725,085	-	-	-	-
Washington	6,984,556	7,128,623	7,445,872	6,211,870	8,122,525	6,105,854
Pacific Noncontiguous	**345,211**	**296,807**	**312,505**	**328,467**	**303,317**	**318,313**
Alaska	345,211	296,807	312,505	328,467	303,317	318,313
Hawaii	-	-	-	-	-	-
Total U.S.	**1,203,203,232**	**1,161,562,368**	**1,075,037,091**	**975,742,083**	**985,218,596**	**944,390,993**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 25. Net Generation by Oil-Fired Steam Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**40,986,221**	**46,843,367**	**43,054,373**	**45,215,659**	**42,815,109**	**42,881,302**
Connecticut	10,830,169	12,557,585	10,651,993	11,555,013	11,075,475	11,349,005
Maine	2,149,918	2,030,886	1,177,949	953,688	724,858	1,019,111
Massachusetts	25,257,712	29,071,665	28,428,238	30,246,841	28,916,616	28,417,123
New Hampshire	2,148,775	2,363,221	2,353,311	1,904,834	1,534,587	1,635,947
Rhode Island	596,658	812,996	439,126	552,472	557,468	454,663
Vermont	2,989	7,014	3,756	2,812	6,104	5,452
Middle Atlantic	**51,230,025**	**55,495,759**	**61,737,748**	**81,024,149**	**77,197,388**	**69,738,819**
New Jersey	5,735,329	7,804,818	10,964,983	15,517,438	14,799,379	12,837,349
New York	36,478,245	37,620,486	39,584,978	50,957,293	49,971,613	48,745,455
Pennsylvania	9,016,452	10,070,455	11,187,787	14,549,418	12,426,396	8,156,015
East North Central	**9,105,764**	**13,740,396**	**16,950,142**	**21,196,500**	**15,136,108**	**12,791,185**
Illinois	5,285,957	7,087,666	6,958,993	6,909,850	5,043,024	3,568,360
Indiana	277,471	252,065	459,965	1,665,242	839,630	610,681
Michigan	3,028,311	5,483,411	8,110,368	10,363,304	7,635,801	7,752,445
Ohio	375,391	773,964	1,200,396	1,789,372	1,260,330	595,627
Wisconsin	138,634	143,290	220,421	468,731	357,322	264,073
West North Central	**606,275**	**819,846**	**2,207,196**	**3,976,908**	**3,499,875**	**3,648,968**
Iowa	57,959	54,335	124,638	111,579	108,167	116,713
Kansas	261,391	313,598	1,104,140	2,139,669	2,018,149	2,198,762
Minnesota	79,166	180,874	329,986	583,055	565,081	432,011
Missouri	119,916	112,634	285,424	567,352	408,179	279,591
Nebraska	39,192	110,646	298,633	485,701	321,847	539,734
North Dakota	36,408	26,592	33,909	25,123	36,925	17,495
South Dakota	12,242	21,166	30,467	64,428	41,527	64,663
South Atlantic	**59,495,579**	**62,687,582**	**73,386,232**	**83,798,703**	**76,886,922**	**81,182,140**
Delaware	3,120,331	3,551,752	4,100,391	4,764,126	4,334,776	3,913,273
District of Columbia	344,621	674,299	1,004,532	1,700,087	1,738,515	1,237,081
Florida	46,420,663	43,009,827	42,823,195	43,623,546	39,096,614	45,321,584
Georgia	335,129	446,482	1,319,799	2,915,194	3,381,094	3,604,149
Maryland	3,884,375	4,751,245	7,825,679	10,731,410	9,324,152	9,563,318
North Carolina	160,761	197,388	129,754	759,869	192,080	344,077
South Carolina	1,078,148	1,387,017	2,188,573	3,593,448	3,165,687	2,669,072
Virginia	3,672,729	8,263,315	13,549,902	14,911,606	15,224,016	14,156,951
West Virginia	478,823	406,260	424,407	799,398	429,988	372,635
East South Central	**2,102,099**	**3,638,262**	**6,384,015**	**11,910,713**	**9,962,505**	**7,645,232**
Alabama	35,961	44,932	14,292	38,955	80,852	59,676
Kentucky	185,454	125,700	80,444	105,955	77,404	62,988
Mississippi	1,765,414	3,345,952	6,258,131	11,765,802	9,804,249	7,522,567
Tennessee	115,270	121,678	31,148	-	-	-
West South Central	**3,751,114**	**7,559,615**	**15,252,757**	**26,471,089**	**24,171,957**	**15,014,073**
Arkansas	454,041	1,915,050	4,498,786	7,923,721	8,113,145	5,052,870
Louisiana	2,625,625	4,776,460	8,244,613	14,545,190	13,208,901	7,736,242
Oklahoma	2,432	1,487	33,269	79,883	79,595	24,723
Texas	669,016	866,618	2,476,089	3,922,295	2,770,317	2,200,239
Mountain	**687,603**	**2,747,032**	**4,248,778**	**4,836,826**	**5,689,538**	**4,086,053**
Arizona	270,688	849,344	2,624,1[illegible]	2,533,994	3,990,718	2,893,688
Colorado	73,863	102,837	147,546	225,752	171,514	265,268
Idaho	-	-	-	-	-	-
Montana	12,756	16,522	50,849	33,537	90,169	25,979
Nevada	137,117	1,469,923	851,904	1,669,875	788,510	338,144
New Mexico	82,102	186,183	386,790	204,588	481,821	481,061
Utah	39,020	63,486	114,652	88,183	113,863	18,257
Wyoming	72,056	58,737	72,919	80,897	52,943	63,656
Pacific	**27,303,738**	**38,240,929**	**60,422,851**	**59,472,912**	**76,395,011**	**59,451,678**
California	27,280,983	38,133,316	60,201,578	59,456,410	76,378,246	59,433,282
Oregon	12,498	11,226	0	0	0	0
Washington	10,257	96,388	221,274	16,502	16,765	18,396
Pacific Noncontiguous	**6,124,270**	**6,071,313**	**6,032,025**	**5,878,308**	**5,745,872**	**5,546,130**
Alaska	761	1,048	596	296	1,187	4,994
Hawaii	6,123,508	6,070,265	6,031,429	5,878,012	5,744,685	5,541,137
Total U.S.	**201,392,687**	**237,844,102**	**289,656,118**	**343,781,766**	**337,500,287**	**301,985,[illegible]**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 26. Net Generation by Gas-Fired Steam Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**746,470**	**544,453**	**677,466**	**116,473**	**269,098**	**227,901**
Connecticut	-	-	-	-	0	0
Maine	-	-	-	-	-	-
Massachusetts	521,069	395,520	503,697	114,364	241,647	175,993
New Hampshire	-	-	-	-	-	-
Rhode Island	214,512	136,511	143,050	0	0	48,884
Vermont	10,889	12,423	30,719	2,109	27,451	3,024
Middle Atlantic	**17,456,322**	**16,163,545**	**8,728,044**	**167,032**	**871,860**	**1,353,754**
New Jersey	6,475,316	5,997,778	2,540,066	68,053	555,093	905,847
New York	10,971,751	10,148,566	6,180,667	95,716	314,986	442,987
Pennsylvania	9,256	17,202	7,312	3,263	1,781	4,920
East North Central	**1,799,454**	**2,457,807**	**4,595,358**	**2,986,596**	**1,760,153**	**4,756,104**
Illinois	475,757	802,769	2,189,813	1,558,398	696,072	2,118,502
Indiana	383,080	105,105	206,056	269,468	50,252	209,981
Michigan	646,083	954,712	1,203,678	714,744	715,910	1,660,529
Ohio	54,742	61,555	161,672	142,484	145,721	262,839
Wisconsin	237,792	533,756	834,139	301,502	152,199	504,255
West North Central	**7,102,233**	**10,068,994**	**11,591,172**	**11,730,327**	**13,848,994**	**15,074,897**
Iowa	204,927	369,054	528,998	534,995	986,855	1,782,931
Kansas	5,829,420	7,546,257	8,625,022	8,712,405	9,946,325	9,476,312
Minnesota	309,052	426,263	387,976	39,592	254,870	782,130
Missouri	472,795	854,699	1,087,587	1,601,062	1,596,132	1,607,989
Nebraska	264,628	839,229	956,474	840,863	1,056,583	1,360,249
North Dakota	-107	-100	-84	-69	-76	-98
South Dakota	1,518	13,591	5,199	1,479	8,305	65,384
South Atlantic	**16,259,465**	**14,971,518**	**15,199,762**	**14,481,796**	**12,823,516**	**12,043,806**
Delaware	555,043	678,459	480,037	154,164	132,778	228,059
District of Columbia	-	-	-	-	-	-
Florida	15,155,770	13,718,553	14,019,916	13,413,838	11,861,839	11,027,329
Georgia	185,385	265,453	243,299	457,220	495,392	360,665
Maryland	-	-	-	23,504	24,743	15,505
North Carolina	1,182	1,862	25,645	168	88	508
South Carolina	269,920	204,944	269,360	351,882	236,648	364,637
Virginia	66,437	94,506	153,457	79,716	69,476	23,585
West Virginia	25,729	7,621	8,049	1,304	2,552	23,518
East South Central	**6,547,253**	**8,190,337**	**5,489,299**	**3,990,880**	**3,266,905**	**2,745,423**
Alabama	182,094	107,352	702,990	671,978	345,913	323,506
Kentucky	237,247	154,988	62,395	100,620	46,402	0
Mississippi	6,127,912	7,823,488	4,723,914	3,218,282	2,874,590	2,406,242
Tennessee	0	113,510	0	0	0	15,674
West South Central	**200,388,961**	**211,135,318**	**206,292,357**	**212,769,907**	**210,663,108**	**204,456,565**
Arkansas	5,057,972	5,237,959	2,600,220	481,637	520,260	1,247,739
Louisiana	39,911,721	40,893,577	38,314,563	36,817,916	35,038,262	37,118,101
Oklahoma	26,225,600	31,087,414	32,690,682	34,048,764	33,373,922	33,177,527
Texas	129,193,668	133,916,367	132,686,891	141,421,590	141,730,665	132,913,197
Mountain	**15,091,796**	**13,718,589**	**15,601,018**	**14,121,234**	**13,782,753**	**13,726,257**
Arizona	5,015,516	3,786,673	3,978,245	4,245,065	1,921,544	1,918,974
Colorado	873,241	2,060,408	2,216,651	1,735,485	2,231,125	3,074,663
Idaho	-	-	-	-	-	-
Montana	175,501	345,975	176,489	66,765	73,594	46,721
Nevada	3,931,478	2,207,513	3,454,203	1,929,962	3,057,975	2,403,824
New Mexico	4,910,532	4,973,612	5,308,094	5,571,216	6,078,667	6,086,591
Utah	176,047	311,196	401,548	510,630	355,146	157,643
Wyoming	9,482	33,211	65,789	62,112	64,502	37,841
Pacific	**59,963,103**	**48,861,495**	**42,695,108**	**29,279,151**	**34,927,107**	**29,293,332**
California	59,963,103	48,861,495	42,695,108	29,279,151	34,927,107	29,293,332
Oregon	0	0	0	0	0	0
Washington	-	-	-	-	-	-
Pacific Noncontiguous	**37,945**	**27,948**	**29,418**	**28,188**	**49,769**	**36,270**
Alaska	37,945	27,948	29,418	28,188	49,769	36,270
Hawaii	-	-	-	-	-	-
Total U.S.	**325,393,004**	**326,149,097**	**310,899,001**	**289,671,584**	**292,263,264**	**283,714,308**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 27. Net Generation by Fossil-Fired Steam Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**46,200,229**	**51,926,476**	**46,621,616**	**47,298,057**	**45,607,487**	**45,081,321**
Connecticut	10,830,169	12,557,585	10,661,142	11,572,542	11,064,636	11,358,993
Maine	2,149,918	2,030,886	1,177,949	953,688	724,858	1,019,111
Massachusetts	28,028,481	31,259,437	29,054,422	30,361,204	29,158,263	28,593,116
New Hampshire	4,345,790	5,096,697	5,093,196	3,844,261	4,030,407	3,587,161
Rhode Island	811,170	949,507	582,176	552,472	557,468	503,547
Vermont	34,701	32,364	52,731	13,891	51,854	19,393
Middle Atlantic	**182,016,247**	**191,189,668**	**185,386,087**	**183,284,340**	**183,209,811**	**178,950,842**
New Jersey	19,191,975	20,227,236	19,113,382	21,107,407	21,893,043	20,444,346
New York	61,852,333	62,237,810	59,727,939	64,922,414	65,170,136	62,833,636
Pennsylvania	100,971,938	108,724,621	106,544,766	97,254,519	96,146,632	95,672,859
East North Central	**325,065,593**	**334,936,002**	**340,096,671**	**319,741,100**	**320,263,965**	**317,652,887**
Illinois	68,747,098	74,800,947	75,597,350	71,919,250	70,175,804	69,994,601
Indiana	67,084,126	69,992,367	66,352,958	61,478,111	62,540,499	61,697,602
Michigan	56,859,066	56,888,402	60,677,579	58,691,686	55,975,788	56,226,585
Ohio	107,191,902	107,637,800	112,726,922	105,378,614	108,418,196	107,367,737
Wisconsin	25,183,401	25,616,487	24,741,861	22,273,439	23,153,677	22,366,362
West North Central	**136,774,632**	**136,051,377**	**123,254,248**	**120,425,957**	**116,529,740**	**106,527,128**
Iowa	19,398,941	18,197,712	16,215,063	15,085,961	14,185,277	14,102,278
Kansas	23,677,494	24,070,732	22,295,349	23,269,722	19,657,954	17,902,611
Minnesota	20,413,746	20,672,739	18,360,486	19,726,991	21,167,490	17,411,672
Missouri	47,994,029	47,882,537	45,178,176	43,516,360	44,627,465	41,318,166
Nebraska	8,805,337	9,071,958	7,281,694	5,990,953	5,871,028	5,818,845
North Dakota	13,809,715	13,312,751	11,074,118	9,863,247	8,337,510	7,055,503
South Dakota	2,675,371	2,842,949	2,849,362	2,972,723	2,683,017	2,918,053
South Atlantic	**337,494,608**	**327,158,033**	**316,579,310**	**302,464,514**	**301,645,634**	**300,496,067**
Delaware	8,083,889	6,404,068	6,702,737	6,753,221	6,244,242	6,079,240
District of Columbia	344,621	674,299	1,004,532	1,700,087	1,738,515	1,237,081
Florida	82,672,902	76,466,058	75,071,057	72,783,725	66,154,558	69,862,625
Georgia	52,310,646	50,384,344	46,642,261	44,026,845	42,802,478	37,206,904
Maryland	16,666,563	19,339,622	21,285,567	23,145,512	20,471,293	22,463,629
North Carolina	62,728,361	60,662,590	53,384,678	47,729,266	52,323,683	52,980,338
South Carolina	22,430,990	21,113,691	19,185,834	19,299,256	18,586,559	16,492,297
Virginia	19,119,497	21,741,696	26,057,840	25,465,805	27,428,570	28,102,743
West Virginia	73,137,139	70,371,665	67,244,785	61,560,797	65,895,736	66,071,210
East South Central	**165,366,224**	**168,535,688**	**155,903,809**	**156,847,400**	**159,193,346**	**158,118,583**
Alabama	45,107,369	45,392,810	42,712,684	38,080,873	42,500,921	40,471,088
Kentucky	57,493,920	54,163,732	50,814,113	52,400,799	53,193,052	54,104,096
Mississippi	14,500,167	18,127,058	16,252,773	18,576,300	16,013,732	13,701,439
Tennessee	48,264,748	50,852,087	46,124,239	47,789,428	47,485,641	49,841,961
West South Central	**299,710,157**	**293,399,611**	**275,026,810**	**276,896,360**	**256,989,152**	**234,944,236**
Arkansas	14,987,625	10,093,303	9,501,201	9,914,974	8,633,404	6,300,609
Louisiana	44,066,576	45,670,037	46,559,177	51,363,106	48,247,163	44,854,343
Oklahoma	39,889,005	40,799,626	37,439,686	37,497,692	34,167,690	33,202,250
Texas	200,766,951	196,836,644	181,526,745	178,120,589	165,940,894	150,587,034
Mountain	**134,923,782**	**121,006,512**	**115,785,880**	**101,038,809**	**105,999,411**	**87,568,439**
Arizona	33,408,692	26,337,334	26,690,839	21,233,624	22,004,747	17,881,964
Colorado	23,118,671	20,756,883	19,880,306	18,378,206	18,631,285	16,266,890
Idaho	-	-	-	-	-	-
Montana	5,235,164	5,502,122	5,341,561	4,971,178	4,951,681	3,630,496
Nevada	13,617,426	11,432,925	12,616,673	11,096,229	14,043,617	12,452,871
New Mexico	22,878,093	24,491,613	20,333,119	19,388,682	21,375,233	19,707,775
Utah	11,083,766	11,244,474	9,924,097	7,837,249	6,001,895	2,890,416
Wyoming	25,581,970	21,241,162	20,999,265	18,133,640	18,990,952	14,738,028
Pacific	**95,930,026**	**94,956,133**	**110,563,831**	**94,963,932**	**119,444,643**	**94,850,864**
California	87,244,086	86,994,811	102,896,685	88,735,560	111,305,353	88,726,614
Oregon	1,691,126	736,311	0	0	0	0
Washington	6,994,814	7,225,011	7,667,146	6,228,372	8,139,290	6,124,250
Pacific Noncontiguous	**6,507,425**	**6,396,069**	**6,373,948**	**6,234,964**	**6,098,958**	**5,900,714**
Alaska	383,917	325,803	342,520	356,952	354,273	359,577
Hawaii	6,123,508	6,070,265	6,031,429	5,878,012	5,744,685	5,541,137
Total U.S.	**1,729,988,922**	**1,725,555,567**	**1,675,592,210**	**1,609,195,433**	**1,614,982,147**	**1,530,090,882**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 28. Net Generation by Oil-Fired Gas Turbine/Internal Combustion Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	210,061	339,973	305,003	219,955	243,253	318,589
Connecticut	21,415	56,281	54,568	31,976	49,611	90,238
Maine	9,585	24,456	17,643	12,871	12,631	19,048
Massachusetts	164,156	226,803	209,497	160,406	162,892	174,483
New Hampshire	1,603	3,111	2,011	2,198	3,164	7,790
Rhode Island	7,560	12,832	9,173	5,945	3,806	4,630
Vermont	5,742	16,488	12,110	6,560	11,149	20,401
Middle Atlantic	1,072,548	1,824,738	2,218,677	3,573,281	4,602,145	4,424,567
New Jersey	429,435	952,591	858,028	1,236,475	1,642,169	1,171,313
New York	281,268	213,905	478,967	661,463	1,332,679	1,843,701
Pennsylvania	361,845	658,242	881,683	1,675,344	1,627,297	1,409,553
East North Central	287,057	735,078	2,524,969	4,306,358	3,915,011	3,934,677
Illinois	49,692	150,730	1,031,192	1,504,758	1,425,832	1,393,242
Indiana	88,404	96,996	205,598	328,817	247,950	164,430
Michigan	53,783	119,771	236,170	528,702	727,973	789,485
Ohio	69,057	261,611	711,671	1,386,638	1,222,903	1,277,909
Wisconsin	26,121	105,969	340,339	557,443	290,353	309,611
West North Central	110,652	327,267	1,159,891	1,958,046	1,407,682	1,587,413
Iowa	4,799	17,828	220,090	319,044	241,117	218,940
Kansas	66,992	127,390	240,086	349,188	355,601	504,571
Minnesota	3,782	28,703	212,612	402,631	244,674	385,400
Missouri	26,132	132,524	294,760	685,911	423,002	328,274
Nebraska	7,350	16,161	99,266	156,750	124,147	133,470
North Dakota	880	3,024	68,704	9,811	8,613	6,707
South Dakota	716	1,618	24,373	34,711	10,527	10,050
South Atlantic	1,610,959	2,141,108	3,129,022	4,239,418	5,173,049	4,147,01
Delaware	8,741	24,058	45,649	71,197	73,933	43,35
District of Columbia	13,139	24,307	31,108	80,206	41,614	19,90
Florida	1,025,424	1,344,763	2,240,343	2,303,564	2,386,843	2,407,347
Georgia	83,839	99,361	78,658	513,975	990,598	841,921
Maryland	165,510	274,064	277,038	333,794	237,874	256,711
North Carolina	51,663	52,798	41,555	208,255	301,959	73,70
South Carolina	136,674	163,153	149,181	328,355	562,103	115,607
Virginia	122,736	156,287	264,972	398,477	572,620	376,00
West Virginia	3,233	2,317	517	593	5,505	12,45
East South Central	58,799	95,233	348,670	3,025,782	2,308,476	1,620,03
Alabama	10,046	16,947	45,308	488,331	373,679	271,74
Kentucky	-414	796	2,655	28,629	39,659	55,60
Mississippi	375	1,956	19,956	142,491	179,966	147,39
Tennessee	48,793	75,534	280,752	2,366,331	1,715,172	1,145,28
West South Central	81,870	178,236	230,867	244,458	258,678	145,57
Arkansas	8,316	53,600	34,565	108,704	66,533	19,30
Louisiana	8,520	12,280	15,758	23,915	35,453	39,62
Oklahoma	21,088	29,635	26,681	36,325	33,774	22,38
Texas	43,946	82,722	153,663	75,515	122,918	64,25
Mountain	17,151	90,975	509,160	719,960	775,087	823,65
Arizona	-2,587	19,393	248,183	536,510	639,779	570,47
Colorado	13,110	57,149	212,221	151,258	106,916	203,17
Idaho	48	74	526	2,264	632	1,03
Montana	370	5,272	7,329	1,525	1,953	1,39
Nevada	4,162	3,295	22,407	9,632	3,134	21,30
New Mexico	1,820	3,204	9,172	10,573	16,887	19,37
Utah	583	792	6,755	2,042	2,600	2,16
Wyoming	-355	1,797	2,566	6,156	3,185	4,72
Pacific	470,521	1,189,525	2,094,717	1,332,549	1,051,540	239,9
California	469,576	1,142,114	1,480,687	1,279,574	921,646	232,9
Oregon	-2,720	45,223	593,601	46,984	123,293	5,97
Washington	3,666	2,188	20,428	5,991	6,610	1,0
Pacific Noncontiguous	757,230	823,086	784,724	773,588	679,278	570,57
Alaska	349,766	404,193	412,438	410,583	410,035	349,15
Hawaii	407,464	418,893	372,286	363,005	269,243	227,41
Total U.S.	4,676,849	7,745,219	13,305,500	20,393,396	20,414,207	17,818,0

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 29. Net Generation by Gas-Fired Gas Turbine/Internal Combustion Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**49,195**	**31,715**	**56,399**	**8,026**	**3,715**	**41,861**
Connecticut	0	0	0	0	0	27,755
Maine	-	-	-	-	-	-
Massachusetts	40,149	31,715	54,297	8,026	3,715	13,609
New Hampshire	9,045	0	2,102	0	0	496
Rhode Island	-	-	-	-	-	-
Vermont	-	-	-	-	-	-
Middle Atlantic	**1,477,340**	**1,703,460**	**664,598**	**38,417**	**133,206**	**73,300**
New Jersey	667,625	903,908	257,145	5,017	72,387	35,400
New York	594,636	617,178	292,694	4,722	40,172	9,317
Pennsylvania	215,079	182,375	114,759	28,678	20,647	28,583
East North Central	**1,309,027**	**2,031,326**	**2,152,682**	**1,924,437**	**1,739,492**	**2,300,121**
Illinois	474,477	605,221	442,344	344,773	369,751	397,319
Indiana	85,257	54,617	38,230	28,579	34,746	69,310
Michigan	492,404	867,064	990,365	1,259,879	1,017,949	1,410,231
Ohio	80,843	221,067	189,585	22,083	41,955	64,485
Wisconsin	176,046	283,357	492,157	269,123	255,092	358,776
West North Central	**1,085,749**	**1,561,475**	**1,821,606**	**1,791,350**	**1,761,549**	**2,019,900**
Iowa	11,970	52,974	44,161	36,541	103,181	248,314
Kansas	792,002	927,607	1,070,897	996,391	914,488	918,713
Minnesota	104,232	165,415	124,562	75,339	131,492	217,015
Missouri	111,805	308,688	448,672	529,046	411,203	385,351
Nebraska	65,900	106,139	131,445	153,427	198,461	238,761
North Dakota	85	26	186	524	1,747	1,580
South Dakota	-243	626	1,483	62	977	10,166
South Atlantic	**1,335,791**	**1,878,096**	**1,946,988**	**1,032,749**	**608,757**	**338,567**
Delaware	-	-	-	-	-	0
District of Columbia	-	-	-	-	-	-
Florida	673,182	1,140,193	1,051,926	898,206	549,860	307,584
Georgia	19,724	20,029	1,413	5,181	7,743	5,643
Maryland	363,201	343,631	628,445	19,601	4,204	5,985
North Carolina	50,247	95,264	8,899	-	-	0
South Carolina	146,873	201,350	159,306	102,333	9,412	3,884
Virginia	82,564	77,629	97,000	7,428	37,537	15,470
West Virginia	-	-	-	-	-	-
East South Central	**324,712**	**374,540**	**374,179**	**295,452**	**303,760**	**283,875**
Alabama	-172	0	0	0	0	0
Kentucky	3,176	3,906	6,829	4,848	10,607	7,850
Mississippi	297,398	370,634	367,350	290,604	293,153	276,025
Tennessee	24,310	-	-	-	-	0
West South Central	**8,305,816**	**7,576,899**	**6,496,877**	**6,664,411**	**4,845,623**	**3,330,744**
Arkansas	1,944	10,696	10,046	4,363	6,763	3,102
Louisiana	35,212	62,017	79,633	117,363	155,664	238,608
Oklahoma	3,043,466	2,492,238	1,828,328	1,544,628	536,708	348,988
Texas	5,225,195	5,011,948	4,578,870	4,998,056	4,146,489	2,740,046
Mountain	**984,567**	**1,597,676**	**1,888,758**	**1,691,633**	**1,684,792**	**942,816**
Arizona	380,946	699,064	717,401	789,354	748,311	327,801
Colorado	125,178	441,590	600,569	512,589	469,168	340,594
Idaho	1,265	4,160	40,263	3,206	57,778	8,370
Montana	596	5,437	11,452	16,945	13,478	19,890
Nevada	373,773	314,098	374,283	168,083	126,262	48,236
New Mexico	48,783	87,814	89,515	147,170	203,454	136,420
Utah	54,006	45,513	55,275	54,286	66,342	61,506
Wyoming	-	-	-	-	-	-
Pacific	**3,647,689**	**1,514,242**	**1,369,948**	**604,355**	**665,709**	**140,960**
California	3,592,787	1,410,993	1,020,720	599,825	665,362	140,973
Oregon	18,266	28,688	190,537	0	347	-13
Washington	36,636	74,561	158,691	4,530	0	0
Pacific Noncontiguous	**1,864,282**	**1,821,374**	**1,814,071**	**1,668,421**	**1,494,990**	**1,437,460**
Alaska	1,864,282	1,621,374	1,814,071	1,668,421	1,494,990	1,437,460
Hawaii	-	-	-	-	-	-
Total U.S.	**20,384,169**	**20,090,803**	**18,586,106**	**15,719,252**	**13,241,595**	**10,909,602**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 30. Net Generation by Gas Turbine/Internal Combustion Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**259,256**	**371,688**	**361,402**	**227,981**	**246,968**	**358,44**
Connecticut	21,415	56,281	54,568	31,976	49,611	117,99
Maine	9,585	24,456	17,643	12,871	12,631	19,04
Massachusetts	204,306	258,518	263,794	168,432	166,608	188,09
New Hampshire	10,648	3,111	4,113	2,198	3,164	8,28
Rhode Island	7,560	12,832	9,173	5,945	3,806	4,63
Vermont	5,742	16,488	12,110	6,560	11,149	20,40
Middle Atlantic	**2,549,868**	**3,528,198**	**2,883,276**	**3,611,699**	**4,735,352**	**4,497,86**
New Jersey	1,097,060	1,856,498	1,115,172	1,241,492	1,714,556	1,206,71
New York	875,904	831,083	771,661	666,185	1,372,851	1,853,01
Pennsylvania	576,924	840,617	996,442	1,704,022	1,647,944	1,438,13
East North Central	**1,596,084**	**2,766,404**	**4,677,651**	**6,230,795**	**5,654,503**	**6,234,79**
Illinois	524,170	755,951	1,473,536	1,849,531	1,815,583	1,790,56
Indiana	173,661	151,613	243,828	357,396	282,695	233,74
Michigan	546,187	986,835	1,226,535	1,788,581	1,745,922	2,199,71
Ohio	149,900	482,678	901,256	1,408,721	1,264,858	1,342,39
Wisconsin	202,167	389,327	832,496	826,566	545,445	668,38
West North Central	**1,196,401**	**1,888,742**	**2,981,497**	**3,749,396**	**3,169,231**	**3,607,31**
Iowa	16,769	70,802	264,251	355,585	344,298	467,25
Kansas	858,994	1,054,997	1,310,983	1,345,579	1,270,089	1,423,28
Minnesota	108,014	194,118	337,174	477,970	376,166	602,41
Missouri	137,938	441,211	743,632	1,214,957	834,206	713,62
Nebraska	73,250	122,320	230,710	310,177	322,608	372,23
North Dakota	965	3,050	68,890	10,336	10,360	8,28
South Dakota	472	2,244	25,856	34,793	11,504	20,21
South Atlantic	**2,946,750**	**4,019,204**	**5,076,010**	**5,272,167**	**5,781,806**	**4,485,58**
Delaware	8,741	24,058	45,649	71,197	73,933	43,35
District of Columbia	13,139	24,307	31,108	80,208	41,614	19,90
Florida	1,698,606	2,484,956	3,292,269	3,201,770	2,936,703	2,714,93
Georgia	103,564	119,390	80,070	519,156	998,342	847,56
Maryland	528,711	617,695	805,483	353,396	242,079	262,69
North Carolina	101,910	148,062	50,455	208,255	301,959	73,70
South Carolina	283,547	364,503	308,487	430,688	571,515	119,49
Virginia	205,300	233,916	361,972	406,904	610,157	391,47
West Virginia	3,233	2,317	517	593	5,505	12,45
East South Central	**383,511**	**469,773**	**722,849**	**3,321,234**	**2,612,236**	**1,903,90**
Alabama	9,874	16,947	45,308	488,331	373,679	271,74
Kentucky	2,762	4,702	9,484	33,477	50,266	63,45
Mississippi	297,773	372,590	387,306	433,095	473,119	423,42
Tennessee	73,103	75,534	280,752	2,366,331	1,715,172	1,145,28
West South Central	**8,387,686**	**7,755,135**	**6,727,544**	**6,908,869**	**5,104,301**	**3,476,31**
Arkansas	10,259	64,296	44,611	113,067	73,296	22,40
Louisiana	43,732	74,296	95,391	141,278	191,116	278,23
Oklahoma	3,064,554	2,521,873	1,855,009	1,580,953	570,482	371,37
Texas	5,269,141	5,094,670	4,732,533	5,073,571	4,269,407	2,804,30
Mountain	**1,001,718**	**1,688,651**	**2,397,919**	**2,411,592**	**2,459,879**	**1,766,47**
Arizona	378,359	718,456	965,585	1,325,865	1,388,090	898,28
Colorado	138,288	498,739	812,789	663,846	576,083	543,77
Idaho	1,333	4,234	40,789	5,470	58,410	9,40
Montana	966	10,709	18,782	18,470	15,430	21,28
Nevada	377,935	317,393	396,691	177,715	129,397	69,53
New Mexico	50,603	91,018	98,687	157,743	220,341	155,79
Utah	54,569	46,305	62,030	56,328	68,942	63,67
Wyoming	-355	1,797	2,566	6,156	3,185	4,72
Pacific	**4,118,211**	**2,703,767**	**3,464,664**	**1,936,904**	**1,717,257**	**380,95**
California	4,062,363	2,553,107	2,501,407	1,879,399	1,587,007	373,91
Oregon	15,546	73,911	784,138	46,984	123,640	5,95
Washington	40,301	76,749	179,119	10,521	6,610	1,0
Pacific Noncontiguous	**2,621,513**	**2,644,460**	**2,598,795**	**2,442,010**	**2,174,268**	**2,014,0**
Alaska	2,214,048	2,225,567	2,226,510	2,079,005	1,905,025	1,786,6
Hawaii	407,464	418,893	372,286	363,005	269,243	227,4
Total U.S.	**25,061,018**	**27,836,022**	**31,891,606**	**36,112,648**	**33,655,802**	**28,725,6**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 31. Net Generation by Nuclear Powered Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**25,784,617**	**22,450,202**	**26,729,743**	**28,028,103**	**25,529,784**	**25,183,243**
Connecticut	12,673,428	11,834,806	12,706,249	13,862,860	13,174,460	12,330,461
Maine	5,211,940	4,404,137	4,497,498	5,354,376	5,143,082	5,928,868
Massachusetts	4,330,594	3,232,046	6,077,084	5,570,171	3,674,567	3,663,897
New Hampshire	-	-	-	-	-	-
Rhode Island	-	-	-	-	-	-
Vermont	3,568,656	2,979,213	3,448,912	3,240,697	3,537,675	3,260,016
Middle Atlantic	**43,395,352**	**38,993,722**	**43,914,173**	**52,198,765**	**45,369,481**	**35,939,379**
New Jersey	11,675,102	7,626,726	6,610,696	8,168,570	6,958,920	3,855,103
New York	17,444,446	19,275,630	18,507,260	21,701,007	20,589,684	15,659,251
Pennsylvania	14,275,803	12,091,366	18,796,217	22,329,188	17,820,877	16,425,025
East North Central	**60,675,068**	**55,662,812**	**56,168,589**	**60,172,918**	**50,191,232**	**47,077,489**
Illinois	29,463,149	27,741,512	27,463,151	32,925,533	28,547,082	26,454,532
Indiana	-	-	-	-	-	-
Michigan	17,066,081	15,890,986	15,139,195	13,104,159	10,231,444	9,900,551
Ohio	4,406,818	2,119,116	3,163,138	2,425,068	467,923	-
Wisconsin	9,719,020	9,911,198	10,403,105	11,718,157	10,944,783	10,722,406
West North Central	**18,378,701**	**18,372,819**	**23,051,112**	**20,525,432**	**21,502,699**	**18,213,201**
Iowa	2,203,899	2,562,813	2,889,201	1,208,761	2,888,133	2,478,825
Kansas	-	-	-	-	-	-
Minnesota	10,186,785	10,026,931	11,503,424	11,591,423	11,162,699	9,910,597
Missouri	-	-	-	-	-	-
Nebraska	5,988,018	5,783,076	8,658,487	7,725,247	7,451,866	5,823,779
North Dakota	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-
South Atlantic	**74,597,020**	**70,764,679**	**62,245,011**	**73,455,170**	**64,535,933**	**47,303,321**
Delaware	-	-	-	-	-	-
District of Columbia	-	-	-	-	-	-
Florida	14,448,053	16,736,611	15,390,932	15,810,024	17,557,458	8,648,284
Georgia	7,234,699	8,435,520	5,095,013	4,277,309	3,712,993	4,133,765
Maryland	11,522,661	10,946,910	9,673,642	9,895,979	10,881,335	6,419,951
North Carolina	6,246,059	5,775,315	6,809,420	9,916,915	5,664,116	2,511,413
South Carolina	17,327,326	17,404,299	18,220,437	19,456,665	17,238,817	17,849,702
Virginia	17,818,222	11,466,023	7,055,567	14,098,277	9,481,214	7,740,206
West Virginia	-	-	-	-	-	-
East South Central	**28,346,882**	**24,016,234**	**22,090,359**	**22,830,441**	**19,521,603**	**4,214,462**
Alabama	23,642,813	23,497,394	22,090,359	22,830,441	19,521,603	4,214,462
Kentucky	-	-	-	-	-	-
Mississippi	-	-	-	-	-	-
Tennessee	4,704,069	518,840	-	-	-	-
West South Central	**9,074,612**	**7,832,566**	**3,873,435**	**5,220,121**	**5,084,866**	**3,857,556**
Arkansas	9,074,612	7,832,566	3,873,435	5,220,121	5,084,866	3,857,556
Louisiana	-	-	-	-	-	-
Oklahoma	-	-	-	-	-	-
Texas	-	-	-	-	-	-
Mountain	**748,931**	**666,719**	**212,882**	**609,082**	**224,844**	**0**
Arizona	-	-	-	-	-	-
Colorado	748,931	666,719	212,882	609,082	224,844	0
Idaho	-	-	-	-	-	-
Montana	-	-	-	-	-	-
Nevada	-	-	-	-	-	-
New Mexico	-	-	-	-	-	-
Utah	-	-	-	-	-	-
Wyoming	-	-	-	-	-	-
Pacific	**11,672,319**	**12,355,821**	**16,869,319**	**13,363,038**	**18,922,842**	**9,314,880**
California	3,206,450	4,919,779	8,761,834	7,659,317	8,115,471	4,807,372
Oregon	6,423,929	5,394,550	4,494,894	1,563,250	6,492,383	2,102,528
Washington	2,041,940	2,041,493	3,612,591	4,140,471	4,314,988	2,404,980
Pacific Noncontiguous	-	-	-	-	-	-
Alaska	-	-	-	-	-	-
Hawaii	-	-	-	-	-	-
Total U.S.	**272,673,503**	**251,115,575**	**255,154,623**	**276,403,070**	**250,883,283**	**191,103,531**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

Table 32. Net Generation by Hydroelectric Powered Units by Census Region and State, 1976-1981

(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**4,640,822**	**3,404,637**	**4,512,874**	**4,175,099**	**4,892,508**	**5,230,197**
Connecticut	253,743	249,619	454,966	352,665	424,523	376,773
Maine	1,880,293	1,443,080	1,774,898	1,886,793	1,986,847	2,081,195
Massachusetts	367,523	95,506	373,058	162,992	374,647	423,800
New Hampshire	1,206,326	871,656	1,049,984	965,111	1,216,361	1,329,987
Rhode Island	139	1,265	3,343	4,008	3,548	3,245
Vermont	932,798	743,308	856,626	803,530	886,582	1,015,196
Middle Atlantic	**26,083,201**	**26,689,321**	**27,175,119**	**26,412,656**	**26,474,166**	**29,769,415**
New Jersey	-233,889	-285,520	-286,470	-178,297	-171,539	-248,709
New York	25,658,257	26,241,269	26,240,335	25,831,560	25,441,144	28,603,197
Pennsylvania	658,833	733,573	1,221,255	759,392	1,204,562	1,414,927
East North Central	**3,638,471**	**3,542,286**	**3,764,942**	**3,487,057**	**2,842,073**	**2,900,127**
Illinois	116,848	121,476	112,192	111,400	108,691	111,645
Indiana	508,684	474,392	438,476	360,716	373,576	479,331
Michigan	1,123,665	1,083,328	1,184,940	949,912	804,363	926,133
Ohio	5,545	6,032	4,451	4,171	5,230	8,235
Wisconsin	1,883,729	1,857,059	2,024,884	2,060,858	1,550,213	1,374,784
West North Central	**11,171,207**	**11,787,859**	**13,074,269**	**13,874,887**	**10,248,716**	**13,430,580**
Iowa	980,277	944,849	896,565	928,993	778,745	644,094
Kansas	7,614	8,304	3,654	4,758	3,121	5,221
Minnesota	793,495	641,617	766,116	903,977	536,513	475,228
Missouri	669,081	558,034	1,099,756	1,016,532	454,129	740,097
Nebraska	1,196,795	1,335,709	1,245,887	1,187,404	1,220,696	1,276,388
North Dakota	2,249,921	2,513,209	2,735,936	3,034,181	1,994,430	3,271,714
South Dakota	5,274,024	5,786,138	6,326,355	6,799,042	5,261,082	7,017,837
South Atlantic	**8,752,362**	**15,600,291**	**20,655,104**	**15,989,730**	**15,630,747**	**17,012,710**
Delaware	–	–	–	–	–	–
District of Columbia	–	–	–	–	0	513
Florida	179,901	214,621	240,784	226,046	243,128	259,090
Georgia	2,274,410	4,368,618	4,374,295	3,702,028	3,982,683	4,374,235
Maryland	1,425,612	1,269,656	2,191,076	1,735,493	2,017,585	2,088,418
North Carolina	2,927,337	5,483,286	7,913,460	5,478,269	5,281,867	5,649,844
South Carolina	1,207,818	2,975,850	3,907,633	3,161,599	3,001,510	3,367,812
Virginia	337,508	864,476	1,514,803	1,263,904	687,311	852,785
West Virginia	399,776	423,784	513,054	420,391	416,663	420,013
East South Central	**14,527,176**	**21,088,771**	**28,088,946**	**19,834,295**	**24,038,813**	**22,066,231**
Alabama	6,014,112	9,384,565	11,842,725	7,869,235	10,329,828	9,433,107
Kentucky	2,598,334	2,939,755	3,940,277	3,181,577	3,313,051	3,158,812
Mississippi	–	–	–	–	–	–
Tennessee	5,914,731	8,764,451	12,305,943	8,783,483	10,395,933	9,474,312
West South Central	**3,502,241**	**3,988,496**	**6,900,120**	**4,948,919**	**4,703,701**	**4,626,121**
Arkansas	1,235,324	1,694,850	3,374,913	2,421,157	1,790,528	2,022,061
Louisiana	–	–	–	–	–	–
Oklahoma	1,121,588	1,314,522	2,322,862	1,763,027	1,749,352	1,541,121
Texas	1,145,328	979,125	1,202,345	764,735	1,163,821	1,062,939
Mountain	**32,296,364**	**35,404,816**	**32,000,019**	**33,343,080**	**26,038,376**	**35,427,464**
Arizona	6,788,030	9,820,323	7,240,281	7,009,793	6,594,331	7,562,400
Colorado	1,397,870	1,715,895	1,610,705	1,342,473	1,071,309	1,287,087
Idaho	9,506,727	9,507,152	9,164,972	9,870,562	6,749,240	10,371,976
Montana	11,322,976	9,965,527	10,344,480	11,708,125	8,459,754	12,402,323
Nevada	1,728,892	2,372,231	1,716,469	1,666,132	1,617,043	1,554,559
New Mexico	87,978	94,098	67,813	30,091	27,928	76,205
Utah	623,003	821,467	801,952	733,607	756,835	1,129,586
Wyoming	840,888	1,108,124	1,053,349	982,296	761,936	1,043,329
Pacific	**155,467,666**	**153,955,785**	**143,132,360**	**157,860,920**	**105,073,359**	**152,838,821**
California	29,764,085	40,779,595	33,919,614	37,205,741	14,250,780	23,192,757
Oregon	32,131,521	30,194,211	29,836,679	31,895,849	24,352,287	35,356,233
Washington	93,572,060	82,981,979	79,376,067	88,759,331	66,470,292	94,289,831
Pacific Noncontiguous	**604,034**	**558,707**	**479,057**	**492,234**	**532,055**	**405,389**
Alaska	590,311	538,951	458,548	471,889	512,030	383,461
Hawaii	13,723	19,756	20,508	20,346	20,025	21,929
Total U.S.	**260,683,544**	**276,020,970**	**279,782,812**	**280,418,878**	**220,474,515**	**283,707,054**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Net Electric Energy Generation (continued)

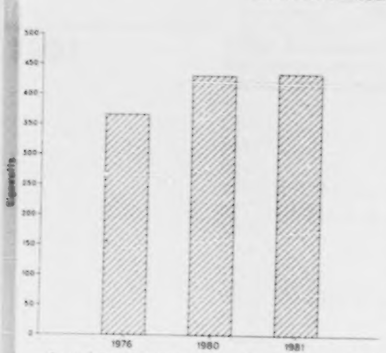
Table 33. Net Generation by Other Types of Units by Census Region and State, 1976-1981
(Megawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**26,090**	**48,942**	**32,339**	**10,983**	**1,092**	-
Connecticut	-	-	-	-	-	-
Maine	-	-	-	-	-	-
Massachusetts	-	-	-	-	-	-
New Hampshire	-	-	-	-	-	-
Rhode Island	-	-	-	-	-	-
Vermont	26,090	48,942	32,339	10,983	1,092	-
Middle Atlantic	**110,489**	**133,105**	**276,368**	**532,456**	**0**	**0**
New Jersey	-	-	-	-	-	0
New York	699	13,007	71,166	-	0	0
Pennsylvania	109,790	120,098	205,202	532,456	-	-
East North Central	**71,016**	**65,730**	**45,827**	**22,422**	**3,140**	**6,129**
Illinois	-	-	-	-	0	0
Indiana	0	0	0	0	0	0
Michigan	0	0	1,308	-	-	-
Ohio	143	1,234	1,376	850	972	720
Wisconsin	70,872	64,495	43,142	21,572	2,168	5,409
West North Central	**16,776**	**79,563**	**121,539**	**138,841**	**72,624**	**36,282**
Iowa	16,776	29,307	14,737	8,327	22,323	35,117
Kansas	0	0	0	1,986	-	0
Minnesota	0	2,013	2,518	2,908	525	1,165
Missouri	0	48,243	104,284	125,619	49,776	0
Nebraska	-	-	-	-	-	-
North Dakota	-	-	-	-	-	-
South Dakota	-	-	-	-	-	-
South Atlantic	**227,778**	**234,197**	**229,531**	**223,184**	**212,533**	**181,057**
Delaware	227,778	234,197	229,531	223,184	212,533	181,057
District of Columbia	-	-	-	-	-	-
Florida	-	-	-	-	-	-
Georgia	-	-	-	-	-	-
Maryland	-	-	-	-	-	-
North Carolina	-	-	-	-	-	-
South Carolina	-	-	-	-	-	-
Virginia	-	-	-	-	-	0
West Virginia	-	-	-	-	-	-
East South Central	-	-	-	-	-	-
Alabama	-	-	-	-	-	-
Kentucky	-	-	-	-	-	-
Mississippi	-	-	-	-	-	-
Tennessee	-	-	-	-	-	-
West South Central	**75,237**	**78,796**	**85,498**	**95,550**	**95,967**	**98,285**
Arkansas	-	-	-	-	-	-
Louisiana	-	-	-	-	-	-
Oklahoma	-	-	-	-	-	0
Texas	75,237	78,796	85,498	95,550	95,967	98,285
Mountain	**33,932**	**17,429**	**51,590**	**51,776**	**46,355**	**37,326**
Arizona	-	-	-	-	-	-
Colorado	-	-	-	-	-	-
Idaho	-	-	-	-	-	-
Montana	33,932	17,429	51,590	51,776	46,355	37,326
Nevada	-	-	-	-	-	-
New Mexico	-	-	-	-	-	-
Utah	-	-	-	-	-	-
Wyoming	-	-	-	-	-	-
Pacific	**5,828,569**	**5,253,349**	**4,107,919**	**3,125,322**	**3,869,943**	**3,680,859**
California	5,708,953	5,093,377	3,898,112	2,993,902	3,610,430	3,634,964
Oregon	119,616	159,972	209,807	131,420	259,513	45,895
Washington	-	-	-	-	-	-
Pacific Noncontiguous	**15,344**	**0**	**0**	**0**	**25,914**	**29,398**
Alaska	-	-	-	-	-	-
Hawaii	15,344	0	0	0	25,914	29,398
Total U.S.	**6,405,231**	**5,911,110**	**4,950,611**	**4,200,536**	**4,327,568**	**4,069,336**

Note: Totals may not equal sum of components because of independent rounding. Other includes solar and geothermal generation, and generation from wood, waste, petroleum coke, and wind.
Source: Federal Power Commission Form 4.

4. Peak Load—Net Capability

Noncoincident Peak Load
for Major Systems in the
United States.



Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

The noncoincident summer peak load[1] in the United States reached a record level of 433,467 megawatts (MW) in 1981. The new record eclipses the previous record of 429,837 MW set in 1980 by 0.8 percent. This annual increase is the smallest annual increase in peak load since 1974, when peak load decreased 2.2 percent from 1973. The line chart at the left illustrates the annual peak load level between 1976 and 1981.

Until the early 1970's, electric power loads in the United States had been growing at an average annual rate of about 7 percent, resulting in a doubling of loads every 10 years. This growth was the result of two basic factors: a population growth rate of about 1.3 percent per year and rapidly increasing per capita use of electricity. During the 1970's, there was a reversal of this long-term trend in the U.S. electric utility industry, triggered by the Arab oil embargo in 1973 and the subsequent rapid rise in energy prices.

Between 1976 and 1981, the average annual growth rate in peak loads was 3.5 percent, a much lower rate than the historical annual rate of about 7 percent. Such factors as increasing prices, conservation, reduced expansion in industry, and general economic conditions of the country have certainly contributed to lower growth. The economy rebounded in 1976 and the growth in noncoincident peak demand in the United States in 1977 was more characteristic of the utility industry's long-term average.

However, after the growth rate in 1977 increased to 6.9 percent, the annual growth rate in noncoincident peak demand in 1978 slipped back to a level more characteristic of the average annual growth rate for 1976-1981. The growth rate remained low until 1980 when extreme weather conditions brought about a sharp rebound of peak loads. However, slow economic activity reduced annual peak load growth to only 0.8 percent in 1981. The following table presents total peak loads experienced by U.S. utilities between 1976 and 1981. The line charts at left illustrate the monthly level of peak loads for 1976, 1980 and 1981.

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[1] The noncoincident peak load is for the summer period which is defined as June 1 through September 30 of each year.

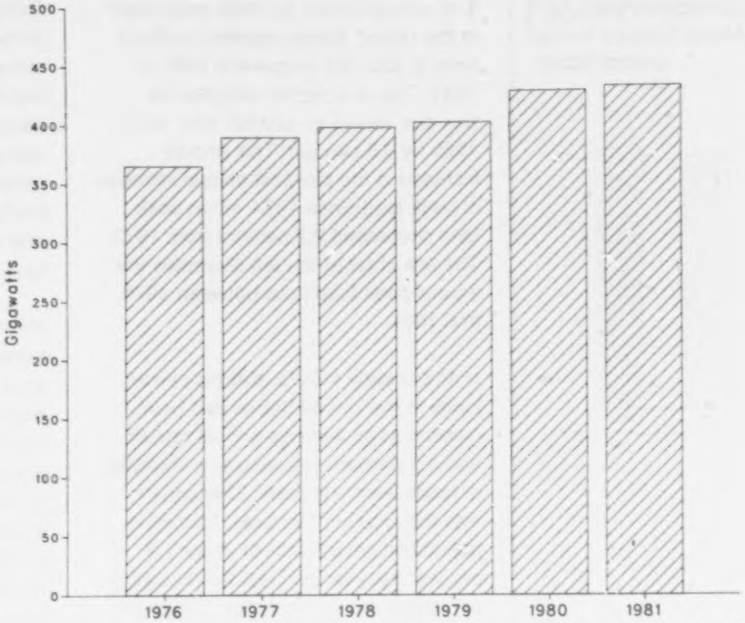
Table 34. Noncoincident Peak Load for Major Electric Utility Systems in the United States, 1976-1981
(Megawatts)

Year	Noncoincident Peak Load[1]	Percent Change from Previous Year
1981	433,467	0.8
1980	429,837	6.6
1979	403,144	1.1
1978	398,911	2.2
1977	390,176	6.9
1976	364,944	-

[1] Noncoincident peak load figures are for summer of each year.
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Peak Load—Net Capability (continued)

Figure 4. Noncoincident Peak Load for Major Systems in the United States, 1976-1981



Source : Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Table 35. Noncoincident Peak Load for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii in 1981

(Megawatts)

North American Electric Reliability Council Region, Alaska, and Hawaii	Peak Load in 1981	Summer Month of Occurrence	Percent Difference from 1980	Percent Change from 1976
ECAR	64,966	July	2.2	17.7
ERCOT	32,801	August	2.4	32.8
MAAC	33,528	July	-2.6	14.6
MAIN	32,432	July	-3.5	1.3
MARCA (U.S.)	18,483	July	*	22.5
NPCC (U.S.)	36,109	July	-2.3	10.7
SERC	91,043	July	1.2	21.2
SWPP	45,206	July	0.2	31.0
WSCC (U.S.)	77,300	June	4.2	18.0
Contiguous U.S.	**431,868**	-	**0.8**	**18.6**
Alaska	489	September	14.0	37.7
Hawaii	1,110	September	-1.5	6.7
Total	**433,467**	-	**0.8**	**18.6**

* = increase or decrease less than 0.05 percent.

Note: Totals may not equal sum of components because of independent rounding.

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Peak Load—Net Capability (continued)

Table 36. Capability and Peak Load for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatts)

1981

North American Electric Reliability Council, Alaska, and Hawaii	Installed Capacity	Net Capability	Demand on Generation	Demand on Receipts	Demand on Deliveries	Peak Load	Peak Month
ECAR	97,308	90,407	64,469	14,510	14,013	64,966	July
MAAC[1]	48,481	44,627	30,565	2,963	0	33,528	July
MAIN	45,956	41,418	31,950	5,076	4,594	32,432	July
MARCA (U.S.)	26,711	25,619	17,235	10,044	8,796	18,483	July
NPCC (U.S.)	53,321	50,556	34,026	7,554	5,471	36,109	July
SERC	129,169	117,044	82,188	16,999	8,144	91,043	July
SWPP	60,102	56,549	43,334	14,438	12,566	45,206	July
ERCOT	44,115	43,011	32,243	4,741	4,183	32,801	August
WSCC (U.S.)	103,442	101,620	70,648	46,264	39,612	77,300	June
Alaska	1,061	1,091	442	57	10	489	September
Hawaii	1,476	1,610	1,071	39	0	1,110	September

1980

North American Electric Reliability Council, Alaska, and Hawaii	Installed Capacity	Net Capability	Demand on Generation	Demand on Receipts	Demand on Deliveries	Peak Load	Peak Month
ECAR	92,541	86,267	60,569	15,252	12,274	63,547	July
MAAC[1]	48,542	44,752	32,162	2,348	90	34,420	July
MAIN	45,981	42,386	31,801	5,710	3,911	33,600	July
MARCA (U.S.)	25,447	24,384	17,494	9,364	8,379	18,479	July
NPCC (U.S.)	52,203	51,032	35,207	8,202	6,452	36,957	July
SERC	123,190	111,754	85,321	15,643	11,039	89,925	July
SWPP	56,474	53,384	42,358	15,544	12,764	45,138	July
ERCOT	43,314	42,260	31,994	2,817	2,779	32,032	July
WSCC (U.S.)	100,367	99,036	70,511	44,812	41,140	74,183	July
Alaska	966	1,225	398	38	7	429	September
Hawaii	1,331	1,480	1,091	36	0	1,127	September

1979

North American Electric Reliability Council, Alaska, and Hawaii	Installed Capacity	Net Capability	Demand on Generation	Demand on Receipts	Demand on Deliveries	Peak Load	Peak Month
ECAR	91,064	86,751	60,861	12,152	11,176	61,837	August
MAAC[1]	48,735	45,285	30,137	1,633	116	31,654	August
MAIN	46,147	42,768	30,522	5,158	3,193	32,487	August
MARCA (U.S.)	24,291	23,470	17,124	8,637	8,401	17,360	August
NPCC (U.S.)	51,656	50,582	32,160	7,826	4,916	35,070	August
SERC	121,330	109,811	80,400	10,416	7,687	83,129	August
SWPP	51,617	49,450	36,798	12,284	9,287	39,795	August
ERCOT	41,940	41,194	28,286	2,027	1,858	28,455	July
WSCC (U.S.)	95,780	94,743	66,476	40,526	35,165	71,837	June
Alaska	943	1,053	379	46	5	420	September
Hawaii	1,307	1,464	1,059	41	0	1,100	September

[1] These values are coincident, occurring simultaneously for all systems in a reliability council region.

Note: This is a summation of the individual system transactions at the times of the system peak loads.

Source: •Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Peak Load—Net Capability (continued)

Table 36. Capability and Peak Load for Major Electric Utility Sytems by NERC Region, Alaska, and Hawaii (continued)

(Megawatts)

1978

North American Electric Reliability Council, Alaska, and Hawaii	Installed Capacity	Net Capability	Demand on Generation	Demand on Receipts	Demand on Deliveries	Peak Load	Peak Month
ECAR	89,661	86,466	59.630	12,966	10,947	61,649	September
MAAC[1]	47,906	43,748	31,790	369	473	31,686	August
MAIN	44,619	41,178	31,102	4,503	3,263	32,342	August
MARCA (U.S.)	22,881	21,941	16,815	7,384	6,529	17,670	August
NPCC (U.S.)	51,634	49,356	34,995	5,631	5,296	35,330	August
SERC	118,021	107,447	79,699	11,207	10,406	80,500	June
SWPP	50,946	48,508	37,105	13,072	9,803	40,374	August
ERCOT	38,236	37,759	28,681	1,530	1,566	28,645	July
WSCC (U.S.)	91,377	91,487	66,534	39,053	36,921	69,266	July
Alaska	875	893	367	41	6	402	September
Hawaii	1,379	1,455	1,006	41	0	1,047	August

1977

North American Electric Reliability Council, Alaska, and Hawaii	Installed Capacity	Net Capability	Demand on Generation	Demand on Receipts	Demand on Deliveries	Peak Load	Peak Month
ECAR	82,016	79,184	60,409	12,254	10,560	62,103	July
MAAC[1]	47,701	44,084	31,590	960	370	32,180	July
MAIN	42,202	39,003	28,944	7,100	3,343	32,701	July
MARCA (U.S.)	21,284	20,383	16,147	6,292	6,017	17,146	July
NPCC (U.S.)	51,198	49,803	34,339	6,152	4,790	35,701	July
SERC	111,853	101,891	76,371	14,341	11,165	79,547	July
SWPP	47,844	46,710	36,557	11,514	10,002	38,069	July
ERCOT	34,920	35,561	26,985	1,382	1,473	26,894	August
WSCC (U.S.)	88,020	87,500	59,190	36,766	31,535	64,421	July
Alaska	715	736	355	35	16	374	September
Hawaii	1,374	1,450	1,005	35	0	1,040	September

1976

North American Electric Reliability Council, Alaska, and Hawaii	Installed Capacity	Net Capability	Demand on Generation	Demand on Receipts	Demand on Deliveries	Peak Load	Peak Month
ECAR	79,135	77,428	55,390	9,779	9,145	56,024	July
MAAC[1]	44,813	41,358	28,745	577	58	29,264	August
MAIN	40,842	37,392	27,541	6,433	3,110	30,864	July
MARCA (U.S.)	20,297	19,637	14,544	6,406	5,861	15,089	August
NPCC (U.S.)	49,940	49,272	32,167	6,655	6,199	32,623	June
SERC	105,477	97,250	70,444	11,295	7,418	74,321	July
SWPP	45,235	44,429	34,469	10,372	9,659	35,182	July
ERCOT	32,847	32,906	24,589	1,036	931	24,694	August
WSCC (U.S.)	84,962	85,262	61,401	37,700	33,633	65,488	June
Alaska	726	742	332	31	8	355	September
Hawaii	1,354	1,430	1,007	33	0	1,040	September

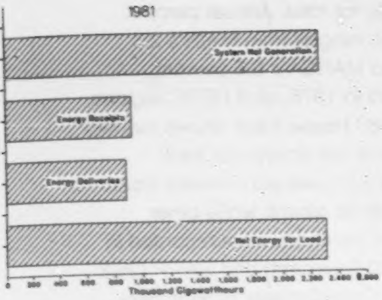
[1] These values are coincident, occurring simultaneously for all systems in a reliability council region.

Note: This is a summation of the individual system transactions at the times of the system peak loads.

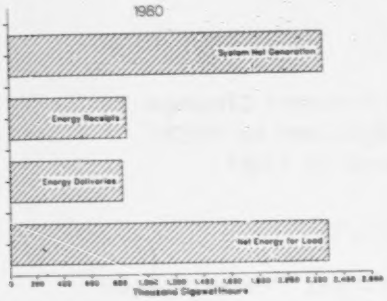
Source: •Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

5. Net Energy for Load

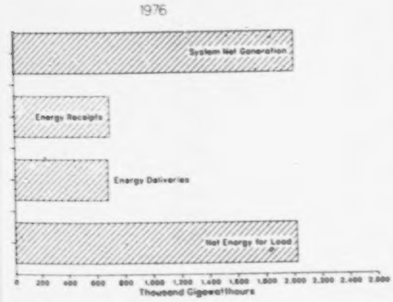
Net Energy for Load for Major Systems



Net Energy for Load for Major Systems, 1981
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.



Net Energy for Load for Major Systems, 1980
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.



Net Energy for Load for Major Systems, 1976
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Major electric utilities in the United States produced 2,308,696 gigawatthours (GWh) of electricity for their customers during 1981, an increase of 18,126 GWh or 0.8 percent from 1980. This annual percent increase is less than half the annual percent increase exhibited by major utilities between the end of 1979 and the end of 1980.

Net energy for load represents the electricity major utilities generate for their customers. To this is added the amount of electricity bought or received by utilities that is intended for resale to customers (energy receipts). From this amount is subtracted the electricity generated by utilities that is sold or sent to other utilities for resale (energy deliveries). Energy receipts and deliveries are not equal for several reasons, particularly because of exchanges of electricity between U.S. utilities and their Canadian and Mexican counterparts. Simply stated, net energy for load represents net generation, plus energy receipts, minus energy deliveries.

Net energy for load data can also be related to data concerning the sales of electricity. Ideally, net energy for load is the amount of electricity needed to serve utility customers (represented by sales data) in addition to the electricity needed to account for that lost in the transmission and distribution process.

Utilities use this data to help make several decisions. First, utilities decide how to best utilize their current capacity (as baseload, intermediate or peaking units) in meeting customer demand. Secondly, depending on whether a respective utility has enough capacity to meet its customer demand, the utility will decide whether to buy additional electricity from outside sources or sell excess electricity to other firms. Net energy for load data also form a basis for utilities to plan their fuel requirements. Net energy for load data are also useful in making several long-term decisions. These are discussed in Chapter 12 (Projections).

Table 37. Net Energy for Load and Percent Change from Previous Year for Major Electric Utility Systems in the United States, 1976-1981

(Gigawatthours)

Year	Net Generation[1]	Energy Receipts[2]	Energy Deliveries[2]	Net Energy for Load	Percent Change from Previous Year
1981......	2,266,684	924,004'	881,941	2,308,696	0.8
1980......	2,258,325	856,429	824,357	2,290,397	1.7
1979......	2,220,066	800,946	768,188	2,252,824	2.2
1978......	2,180,204	744,076	718,943	2,205,337	4.2
1977......	2,098,972	683,784	665,416	2,117,339	4.8
1976......	2,006,316	696,167	682,453	2,020,031	-

[1] Net generation reported by utilities is included in the total for the council of which the utility is a member. Reporting utilities do not account for all U.S. generation and thus, net generation totals are different from those presented in Chapter 3.

[2] This is a summation of the individual respondent transactions, including transactions with other utilities in the same council areas and Mexico and Canada.

Note: Totals may not equal sum of components because of independent rounding. Percent change is calculated before rounding.

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Net Energy for Load (continued)

Table 37 details net generation, energy receipts, energy deliveries and net energy for load for the period 1976-1981. The bar charts graphically illustrate these same items for the years 1981, 1980, and 1976.

Net Energy for Load By NERC Region

The North American Electric Reliability Council (NERC) Region that produced the greatest amount of net energy for load during 1981 was SERC, 481,869 GWh. SERC was followed by WSCC, 446,428, and ECAR, 366,182. From 1980, WSCC recorded the highest annual percent increase of 4.6 percent. This was well ahead of ERCOT, which managed a 1.4 percent annual increase. Half of the NERC regions showed decreases from 1980 in net energy for load. Annual percent decreases ranged from MAIN's 2.5 percent to MARCA's 0.5 percent. Compared to 1976, all 9 NERC regions, Alaska, and Hawaii have shown marked increases in net energy for load. ERCOT's 37.9 percent increase from 1976 leads all others, while other significant increases were recorded in Alaska (32.8 percent) and SWPP (25.2 percent). Overall, major utilities have increased their net energy for load by 14.3 percent since 1976.

Table 38. Net Energy for Load and Percent Change for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii in 1981

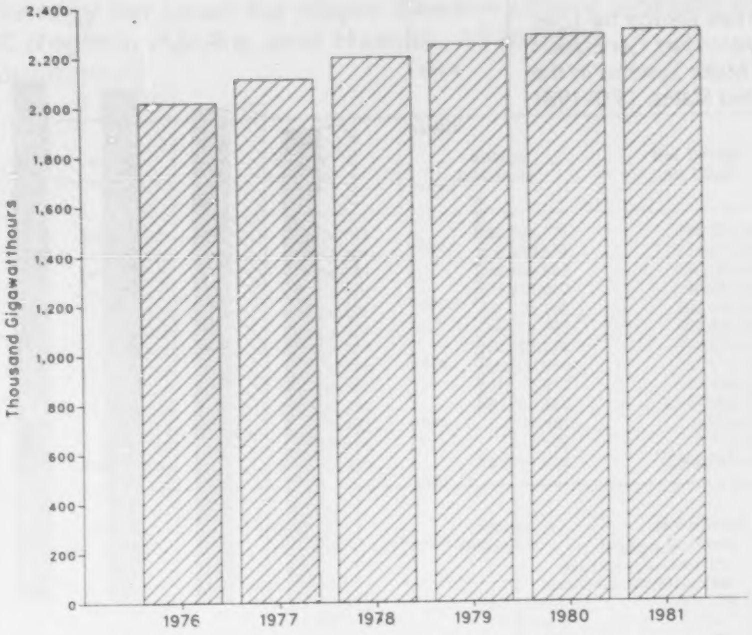
(Gigawatthours)

North American Electric Reliability Council Region, Alaska, and Hawaii	Net Energy for Load in 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	366,182	0.5	6.6
ERCOT	164,504	1.4	37.9
MAAC	174,074	-0.6	9.0
MAIN	167,587	-2.5	3.6
MARCA (U.S.)	90,937	-0.5	16.1
NPCC (U.S.)	202,488	-0.6	7.1
SERC	481,869	0.7	16.3
SWPP	204,981	-0.8	25.2
WSCC (U.S.)	446,428	4.6	16.8
Contiguous U.S.	**2,299,050**	**0.8**	**14.3**
Alaska	2,923	1.1	32.8
Hawaii	6,723	0.6	15.4
Total	**2,308,696**	**0.8**	**14.3**

Note: Totals may not equal sum of components because of independent rounding.
Percent change and percent difference are calculated before rounding.
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Net Energy for Load (continued)

Figure 5. Net Energy for Load for Major Systems in the United States, 1976-1981



Source : Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Table 39. Net Energy for Load for Major Electric Utility Systems in the United States, 1976-1981

(Megawatthours)

Year	Net Generation[1]	Receipts[2]	Deliveries[2]	Net Energy for Load
1981	2,266,634,130	924,003,649	881,941,404	2,308,696,375
1980	2,258,325,152	856,428,767	824,356,984	2,290,396,935
1979	2,220,066,259	800,945,859	768,188,043	2,252,824,075
1978	2,180,203,990	744,076,251	718,942,770	2,205,337,471
1977	2,098,971,916	683,783,628	665,416,114	2,117,339,430
1976	2,006,316,342	696,167,340	682,453,080	2,020,030,601

[1] Net generation reported by utilities is included in the total for the council of which the utility is a member. Reporting utilities do not account for all U.S. generation and thus, net generation totals are different from those presented in chapter 3.

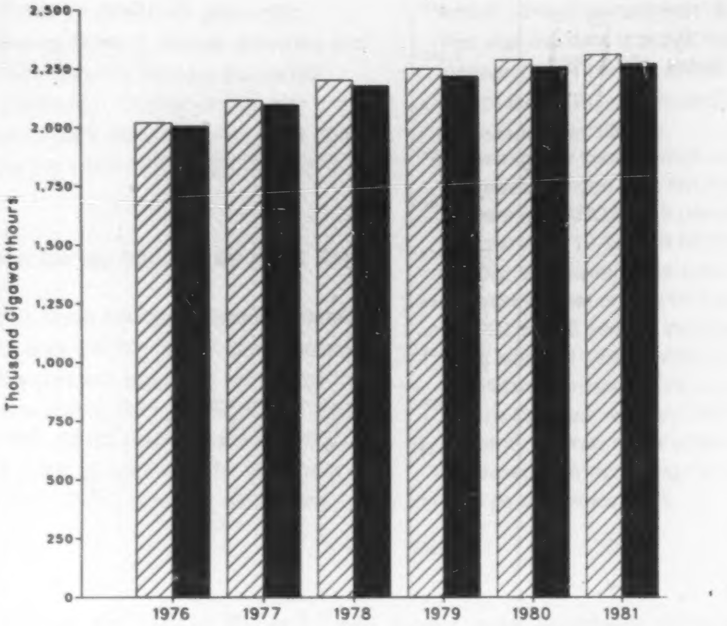
[2] This is a summation of the individual respondent transactions, including transactions with other utilities in the same council areas and Mexico and Canada.

Note: Totals may not equal sum of components because of independent rounding.

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

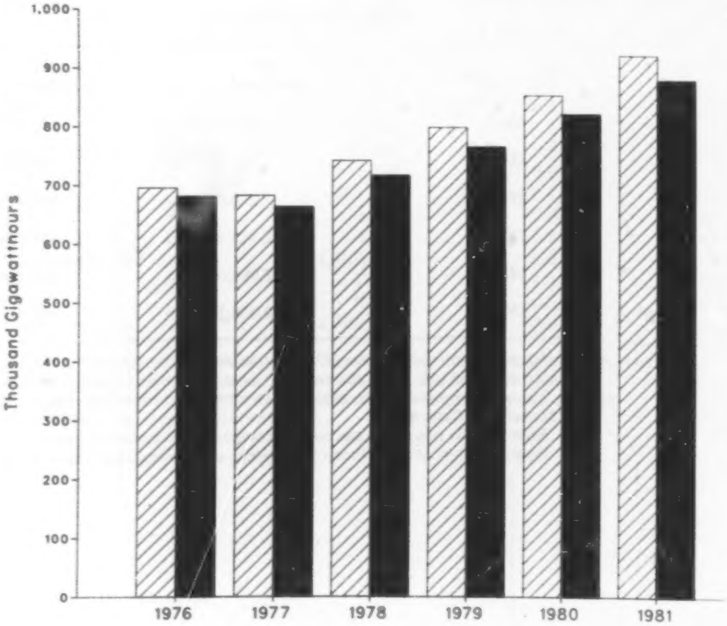
Net Energy for Load (continued)

Figure 6. Net Energy for Load and System Net Generation for Major Systems in the United States, 1978-1981



Source : Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Figure 7. Receipts and Deliveries of Electricity for Major Systems, 1976-1981



Source : Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Net Energy for Load (continued)

Table 40. Net Energy for Load for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii, 1976-1981

(Megawatthours)

1981

North American Electric Reliability Council Region, Alaska, and Hawaii	Net Generation[1]	Energy Receipts[2]	Energy Deliveries[2]	Net Energy for Load
ECAR	399,696,164	146,889,746	180,404,375	366,181,535
MAAC	149,509,513	31,004,061	6,439,541	174,074,033
MAIN	167,337,022	50,116,561	49,866,547	167,587,036
MARCA(U.S.)	96,086,531	68,884,524	74,033,997	90,937,058
NPCC(U.S.)	187,227,547	52,985,676	37,725,160	202,488,063
SERC	469,208,355	98,932,371	86,271,887	481,868,839
SWPP	200,445,116	99,306,771	94,771,276	204,980,611
ERCOT	164,327,098	21,109,648	20,932,610	164,504,136
WSCC(U.S.)	423,416,720	354,128,193	331,116,491	446,428,422
Contiguous U.S.	**2,257,254,066**	**923,357,551**	**881,561,884**	**2,299,049,723**
Alaska	2,927,511	370,283	374,481	2,923,313
Hawaii	6,452,553	275,815	5,039	6,723,329
Total	**2,266,634,130**	**934,083 649**	**881,941,404**	**2,308,696,375**

1980

North American Electric Reliability Council Region, Alaska, and Hawaii	Net Generation[1]	Energy Receipts[2]	Energy Deliveries[2]	Net Energy for Load
ECAR	388,408,065	139,189,867	163,092,644	364,505,288
MAAC	157,502,155	24,348,834	6,753,513	175,097,476
MAIN	174,318,985	45,230,948	47,685,691	171,864,242
MARCA(U.S.)	93,670,003	66,745,973	69,022,089	91,393,887
NPCC(U.S.)	191,841,795	53,175,599	41,257,993	203,759,401
SERC	469,664,791	91,396,372	82,451,206	478,609,957
SWPP	198,085,367	94,874,171	86,291,424	206,668,114
ERCOT	162,545,741	16,607,544	16,997,219	162,156,066
WSCC(U.S.)	412,547,573	323,529,693	309,310,405	426,766,861
Contiguous U.S.	**2,248,584,475**	**855,099,001**	**822,862,184**	**2,280,821,292**
Alaska	3,299,690	1,082,502	1,490,364	2,891,828
Hawaii	6,440,987	247,264	4,436	6,683,815
Total	**2,258,325,152**	**856,428,767**	**824,356,984**	**2,290,396,935**

1979

North American Electric Reliability Council Region, Alaska, and Hawaii	Net Generation[1]	Energy Receipts[2]	Energy Deliveries[2]	Net Energy for Load
ECAR	390,094,581	143,302,244	157,490,776	375,906,049
MAAC	159,544,295	14,467,888	2,201,785	171,810,398
MAIN	177,083,211	44,547,953	47,894,117	173,737,047
MARCA(U.S.)	93,078,348	66,916,335	67,946,457	92,048,226
NPCC(U.S.)	187,585,252	50,769,959	38,221,585	200,133,626
SERC	454,389,323	77,101,748	72,966,755	458,524,316
SWPP	184,942,534	87,596,310	78,455,974	194,082,870
ERCOT	150,173,813	16,442,431	16,382,630	150,233,614
WSCC(U.S.)	414,034,153	299,289,161	286,365,902	426,957,412
Contiguous U.S.	**2,210,925,510**	**800,434,029**	**767,925,981**	**2,243,433,558**
Alaska	2,777,688	281,757	253,798	2,805,647
Hawaii	6,363,061	230,073	8,264	6,584,870
Total	**2,220,066,259**	**800,945,859**	**768,188,043**	**2,252,824,075**

[1] Net generation reported by utilities is included in the total for the council of which the utility is a member. Reporting utilities do not account for all U.S. generation and thus, net generation totals are different from those presented in chapter 3.

[2] This is a summation of the individual respondent transactions, including transactions with other utilities in the same council areas and Mexico and Canada.

Note: Totals may not equal sum of components because of independent rounding.

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

Net Energy for Load (continued)

Table 40. Net Energy for Load for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii, 1976-1981 (Continued)

(Megawatthours)

1978

North American Electric Reliability Council Region, Alaska, and Hawaii	Net Generation[1]	Energy Receipts[2]	Energy Deliveries[2]	Net Energy for Load
ECAR	363,184,577	136,729,476	133,645,314	366,268,739
MAAC	167,177,039	9,231,355	7,372,833	169,035,561
MAIN	175,957,377	40,879,920	44,285,165	172,552,132
MARCA(U.S.)	92,047,330	62,757,721	65,475,833	89,329,218
NPCC(U.S.)	196,491,347	34,230,395	32,897,723	197,824,019
SERC	444,004,599	74,098,128	65,450,307	452,652,420
SWPP	191,981,891	82,494,961	82,948,451	191,528,401
ERCOT	147,366,834	12,139,935	11,895,325	147,611,444
WSCC(U.S.)	393,290,062	291,098,197	274,726,604	409,661,655
Contiguous U.S.	**2,171,501,056**	**743,660,088**	**718,697,555**	**2,196,463,589**
Alaska	2,500,824	228,702	239,204	2,490,322
Hawaii	6,202,110	187,461	6,011	6,383,560
Total	**2,180,203,990**	**744,076,251**	**718,942,770**	**2,205,337,471**

1977

North American Electric Reliability Council Region, Alaska, and Hawaii	Net Generation[1]	Energy Receipts[2]	Energy Deliveries[2]	Net Energy for Load
ECAR	365,709,128	130,280,273	131,782,490	364,206,911
MAAC	157,971,429	8,846,964	3,441,590	163,376,803
MAIN	169,756,043	38,787,516	42,682,368	165,861,191
MARCA(U.S.)	84,487,093	51,834,614	56,481,302	79,840,405
NPCC(U.S.)	189,601,579	32,861,613	29,248,783	193,214,409
SERC	435,567,763	68,818,974	63,764,361	440,622,376
SWPP	177,289,964	72,111,752	69,889,346	179,512,370
ERCOT	136,608,855	9,132,112	8,996,085	136,744,882
WSCC(U.S.)	373,754,654	270,665,332	258,862,215	385,557,771
Contiguous U.S.	**2,090,746,508**	**683,339,150**	**665,148,540**	**2,108,937,118**
Alaska	2,248,351	253,654	260,047	2,241,958
Hawaii	5,977,057	190,824	7,527	6,160,354
Total	**2,098,971,916**	**683,783,628**	**665,416,114**	**2,117,339,430**

1976

North American Electric Reliability Council Region, Alaska, and Hawaii	Net Generation[1]	Energy Receipts[2]	Energy Deliveries[2]	Net Energy for Load
ECAR	358,534,189	117,939,510	133,006,112	343,467,587
MAAC	149,595,138	21,308,545	11,187,515	159,716,168
MAIN	162,317,384	40,133,315	40,681,313	161,769,385
MARCA(U.S.)	81,417,732	51,414,954	54,483,338	78,349,348
NPCC(U.S.)	189,513,023	35,774,715	36,227,157	189,060,581
SERC	404,814,954	71,169,850	61,576,745	414,408,059
SWPP	162,845,089	69,538,994	68,637,905	163,746,178
ERCOT	118,491,025	6,967,552	6,140,192	119,318,384
WSCC(U.S.)	370,880,668	281,578,044	270,288,990	382,169,723
Contiguous U.S.	**1,998,409,202**	**695,825,479**	**682,229,267**	**2,012,005,413**
Alaska	2,232,209	180,232	211,066	2,201,375
Hawaii	5,674,931	161,629	12,747	5,823,813
Total	**2,006,316,342**	**696,167,340**	**682,453,000**	**2,020,030,601**

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[1] Net generation reported by utilities is included in the total for the council of which the utility is a member. Reporting utilities do not account for all U.S. generation and thus, net generation totals are different from those presented in chapter 3.

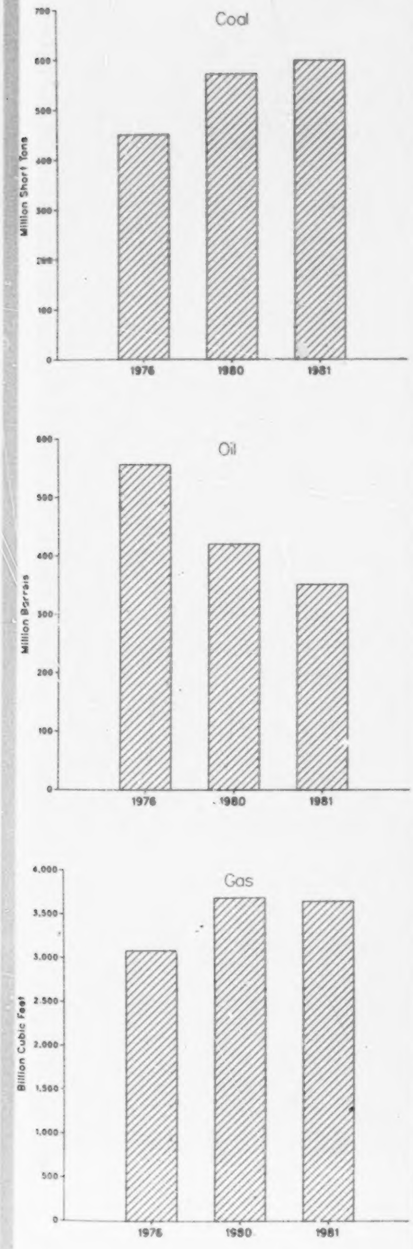
[2] This is a summation of the individual respondent transactions, including transactions with other utilities in the same council areas and Mexico and Canada.

Note: Totals may not equal sum of components because of independent rounding.

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119M and predecessor systems.

6. Fuel Consumption for Electric Energy

Energy
Consumption by
Electric Utilities



Source: Federal Power Commission Form 4.

During 1981, electric utilities in the United States consumed 596,796,833 short tons of coal, a record amount. This amount was a 4.8 percent increase from 1980 (the previous record year). This percentage increase is not as large as the percentage increases reported for the prior two years, but still is proof that coal remains a popular choice as a fuel for both new and converted units that generate electricity.

Generally, utilities in the western (contiguous and noncontiguous) portions of the United States were responsible for the major portion of the increase in coal consumption while eastern utilities reported a slight decrease in coal consumption compared with 1980.

Electric utilities recorded the lowest level of oil consumption since 1970, thus spotlighting their efforts to hold down fuel costs by switching to less costly fuels. Oil consumption during 1981 was 351,111,286 barrels, a 16.4 percent decrease from 1980. This percentage decrease was only slightly less than the decreases reported for 1980 (19.7 percent) and 1979 (17.7 percent). Overall, utilities in all parts of the Nation decreased their oil consumption in significant amounts during 1981.

The consumption of natural gas by electric utilities decreased slightly in 1981, 1.1 percent. The actual amount of gas consumption was 3,640,153,669 thousand cubic feet. The decrease in consumption of gas reverses a two-year increase in consumption. On a yearly basis, utilities last decreased their consumption of gas in 1978. Overall, utilities in the northern and southern parts of the Nation were responsible for the decrease in gas consumption. Meanwhile, utilities in the eastern and western sections of the country reported increased consumption of natural gas.

The table at the top of the next page shows the changes in fuel consumption by electric utilities since 1976. The graphs to the left on this page illustrate utilities' consumption of coal, oil, and natural gas in 1981, 1980, and 1976.

Fuel Consumption for Electric Energy (continued)

Table 41. Consumption of Coal, Oil, and Gas by Electric Utilities in the United States, 1976-1981

Year	Coal[1]	Percent Change from Previous Year	Oil[2]	Percent Change from Previous Year	Natural Gas[3]	Percent Change from Previous Year
1981	596,796,833	4.8	351,111,286	-16.4	3,640,153,669	-1.1
1980	569,273,735	8.0	420,214,232	-19.7	3,681,595,315	5.5
1979	527,051,248	9.5	523,297,016	-17.7	3,490,522,530	9.5
1978	481,234,827	0.9	635,839,049	1.9	3,188,363,144	-0.1
1977	477,125,963	6.4	623,705,193	12.2	3,191,199,763	3.6
1976	448,370,974	-	555,920,191	-	3,080,868,279	-

[1] In short tons.
[2] In barrels.
[3] In thousand cubic feet.
Source: Federal Power Commission Form 4.

Coal Consumption By NERC Region

The North American Electric Reliability Council (NERC) Region consuming the greatest amount of coal during 1981 was ECAR, which burned 164,879,953 short tons. SERC was the second-largest coal consumer, burning 119,472,549 short tons. SWPP showed the largest percent increase during 1981, 48.2 percent. Only two NERC regions showed decreases in coal consumption during 1981: MAAC and MAIN. Between 1976 and 1981, all NERC regions showed increases in coal consumption. SWPP had the largest percentage increase since 1976, 508.0 percent, while ERCOT managed a 269.3 percent increase. Hawaiian utilities, despite using a wide variety of fuels to produce electricity, did not consume any coal in 1981, or since 1976.

Table 42. Consumption of Coal by Electric Utilities by NERC Region, Alaska, and Hawaii in 1981

(Short Tons)

North American Electric Reliability Council Region Alaska, and Hawaii	Coal Consumption in 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	164,879,953	0.8	6.7
ERCOT	44,386,513	12.2	269.3
MAAC	36,816,196	-5.1	8.8
MAIN	58,787,775	-7.6	1.5
MARCA (U.S.)	46,677,264	4.1	54.9
NPCC (U.S.)	8,233,994	0.3	21.3
SERC	119,472,549	2.6	18.4
SWPP	44,906,344	48.2	508.0
WSCC (U.S.)	72,315,721	13.7	62.4
Contiguous U.S.	**596,476,309**	**4.8**	**33.1**
Alaska	320,524	17.5	27.0
Hawaii	-	-	-
Total U.S.	**596,796,833**	**4.8**	**33.1**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Fuel Consumption for Electric Energy (continued)

Oil Consumption By NERC Region

All nine NERC regions and Alaska reduced their consumption of oil during 1981 while Hawaii's consumption remained the same. MARCA and SWPP cut their oil consumption by better than half while ECAR, WSCC, and MAIN reported somewhat lower, but highly significant reductions. The reduction in oil consumption since 1976 by NERC regions and Alaska vividly illustrates the utilities' trend to reduce dependency on oil for the production of electricity. Large decreases in oil consumption were reported for all NERC regions. Alaska reported a more modest decrease of 5.1 percent while Hawaii increased its oil consumption by 12.5 percent since 1976.

Table 43. Consumption of Oil by Electric Utilities by NERC Region, Alaska, and Hawaii in 1981

(Barrels)

North American Electric Reliability Council Region, Alaska, and Hawaii	Oil Consumption in 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	9,306,834	-37.6	-61.1
ERCOT	1,437,209	-13.3	-45.2
MAAC	41,450,883	-19.5	-31.7
MAIN	10,705,012	-24.8	-12.2
MARCA (U.S.)	653,034	-50.9	-95.3
NPCC (U.S.)	131,295,077	-7.8	-17.9
SERC	87,935,702	-5.8	-30.1
SWPP	8,893,157	-50.5	-77.3
WSCC (U.S.)	47,532,705	-32.9	-55.6
Contiguous U.S.	**339,208,613**	**-16.9**	**-37.8**
Alaska	775,416	-13.0	-5.1
Hawaii	11,127,257	*	12.5
Total U.S.	**351,111,286**	**-16.4**	**-36.8**

* = increase or decrease less than 0.05 percent.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Gas Consumption By NERC Region

Five of the 9 NERC regions and Alaska reduced consumption of natural gas in 1981. MARCA's decrease of 46.3 percent slightly outpaced MAIN's decrease of 40.5 percent. Of those regions that increased natural gas consumption in 1981, WSCC reported the highest increase of 19.9 percent.

Since 1976, U.S. utilities have increased consumption of natural gas 18.2 percent. In this same period, NPCC increased its use of natural gas the most, 1,471.0 percent, while ECAR decreased its consumption the most, 56.8 percent. Hawaiian utilities did not report consuming any natural gas to produce electricity between 1976 and 1981.

Fuel Consumption for Electric Energy (continued)

Table 44. Consumption of Gas by Electric Utilities by NERC Region, Alaska, and Hawaii in 1981
(Thousand Cubic Feet)

North American Electric Reliability Council Region, Alaska, and Hawaii	Natural Gas Consumption in 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	26,493,497	-17.6	-56.8
ERCOT	1,055,495,446	-4.7	-0.6
MAAC	95,000,953	0.6	643.0
MAIN	19,492,726	-40.5	-52.7
MARCA (U.S.)	15,861,573	-46.3	-74.8
NPCC (U.S.)	140,332,426	6.8	1,471.0
SERC	194,487,750	0.6	30.6
SWPP	1,239,130,676	-7.7	1.9
WSCC (U.S.)	824,787,760	19.9	85.8
Contiguous U.S.	**3,611,082,807**	**-1.1**	**18.1**
Alaska	29,070,862	1.1	30.9
Hawaii	-	-	-
Total U.S.	**3,640,153,669**	**-1.1**	**18.2**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Coal Consumption By Census Region

Although electric utilities increased their coal consumption by 4.8 percent from 1980 to 1981, there were significant differences among utilities, grouped by Census Regions, regarding coal consumption during 1981. The West South Central Region, where coal is abundant, increased its coal consumption by 25.1 percent during 1981. The Pacific Noncontiguous Region, which includes Alaska where coal is also mined, increased its consumption 17.6 percent. Three of the 10 Census Regions decreased their coal use in 1981. Since 1976, all 10 Census Regions have increased their consumption of coal. The greatest increase was 435.5 percent reported by the West South Central Region, while the New England Region also reported a significant increase of 127.0 percent.

Table 45. Consumption of Coal by Electric Utilities by Census Region in 1981
(Short Tons)

Census Region	Coal Consumption in 1981	Percent Change from 1980	Percent Difference from 1976
New England	1,749,066	-0.9	127.0
Middle Atlantic	48,937,529	-4.9	6.2
East North Central	150,340,090	-1.2	5.1
West North Central	79,048,531	4.6	56.8
South Atlantic	108,695,621	5.8	27.0
East South Central	69,245,391	0.8	3.3
West South Central	66,142,348	25.1	435.5
Mountain	66,156,128	13.6	70.7
Pacific Contiguous	6,161,605	13.4	50.0
Pacific Noncontiguous	320,524	17.5	27.4
Total U.S.	**596,796,833**	**4.8**	**33.1**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Fuel Consumption for Electric Energy (continued)

Oil Consumption By Census Region

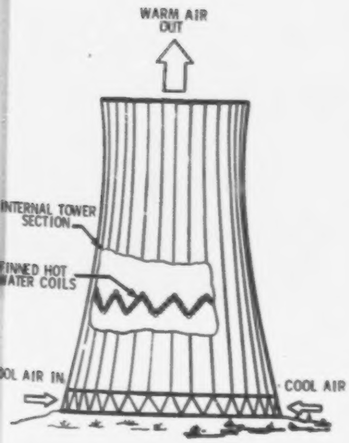
Of no small significance is the fact that in 1981, electric utilities, grouped by Census Regions, all decreased their consumption of oil. The decreases amounted to between 1.0 percent in the Pacific Noncontiguous Region to 73.5 percent in the Mountain Region. In view of the hot weather experienced across the Nation during the summer of 1981 and the subsequent demand for extra electricity for air conditioning units, the nationwide 16.4 percent decrease in oil consumption is encouraging to those who are eager to continue the trend away from imported oil. Since 1976, electric utilities nationwide again show a decreased use of oil to produce electricity. The exception in this case, the Pacific Noncontiguous Region, is an area where the production of electricity is heavily dependent on oil.

Table 46. Consumption of Oil by Electric Utilities by Census Region in 1981

(Barrels)

Census Region	Oil Consumption in 1981	Percent Change from 1980	Percent Difference from 1976
New England	68,129,997	-12.3	-6.0
Middle Atlantic	91,428,555	-8.4	-30.2
East North Central	18,362,076	-33.4	-45.9
West North Central	1,581,370	-39.1	-85.3
South Atlantic	101,748,508	-7.8	-31.3
East South Central	3,613,140	-38.9	-78.0
West South Central	6,847,221	-48.9	-73.4
Mountain	1,384,593	-73.5	-85.2
Pacific Contiguous	46,113,153	-29.7	-52.7
Pacific Noncontiguous	11,902,673	-1.0	11.2
Total U.S.	**351,111,286**	**-16.4**	**-36.8**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.



Gas Consumption By Census Region

The use of natural gas by electric utilities in the United States declined by 1.1 percent in 1981. But among utilities grouped by Census Regions, there were significant differences in the change in the amount used by each region between 1980 and 1981. For instance, changes in the use of natural gas by electric utilities ranged from an increase of 40.4 percent in the New England Region to a 30.0 percent decrease in natural gas usage in the West North Central Region. Although natural gas usage decreased slightly in 1981, 6 of the 10 Census Regions actually increased natural gas usage. Therefore, it would appear that utilities are not moving away from the use of natural gas as quickly as from the use of oil. Since 1976, utilities' use of natural gas has increased 18.2 percent. The largest increases have occured in the eastern and western sections of the United States. Two Census Regions have cut their use of natural gas by more than half since 1976: the East North Central Region, down 54.9 percent; and the West North Central Region, down 51.9 percent.

Fuel Consumption for Electric Energy (continued)

Table 47. Consumption of Gas by Electric Utilities by Census Region in 1981
(Thousand Cubic Feet)

Census Region	Natural Gas Consumption in 1981	Percent Change from 1980	Percent Difference from 1976
New England	9,825,570	40.4	170.0
Middle Atlantic	213,899,172	3.5	1,254.7
East North Central	47,183,968	-28.4	-54.9
West North Central	100,327,854	-30.0	-51.9
South Atlantic	194,224,143	1.5	41.4
East South Central	79,244,447	-20.3	113.9
West South Central	2,134,763,458	-4.9	2.1
Mountain	175,602,992	0.3	6.1
Pacific Contiguous	656,011,203	26.1	122.4
Pacific Noncontiguous	29,070,862	1.1	30.9
Total U.S.	**3,640,153,669**	**-1.1**	**18.2**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Fuel Consumption for Electric Energy (continued)

Table 48. Consumption of Coal, Oil and Gas by Electric Utilities in the United States, 1976-1981

Year	Coal (short tons)	Oil (barrels)	Gas (Mcf)
1981	596,796,833	351,111,286	3,640,153,669
1980	569,273,735	420,214,232	3,681,595,315
1979	527,051,248	523,297,016	3,490,522,530
1978	481,234,627	635,839,049	3,188,363,144
1977	477,125,963	623,705,193	3,191,199,763
1976	448,370,974	555,920,191	3,080,868,279

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

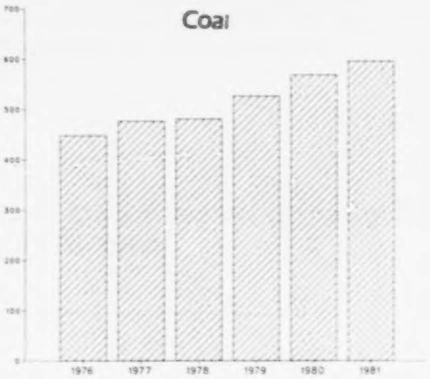


Figure 8. Consumption of Coal by Electric Utilities 1976-1981

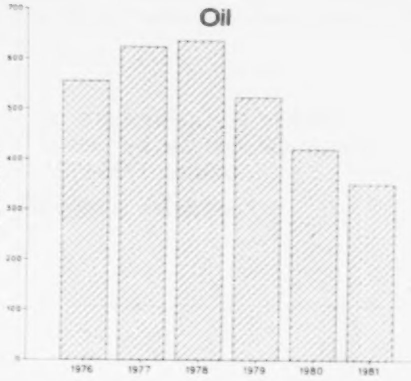


Figure 9. Consumption of Oil by Electric Utilities, 1976-1981

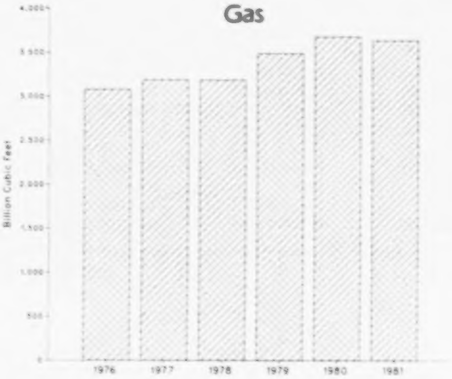


Figure 10. Consumption of Gas by Electric Utilities, 1976-1981

Fuel Consumption for Electric Energy (continued)

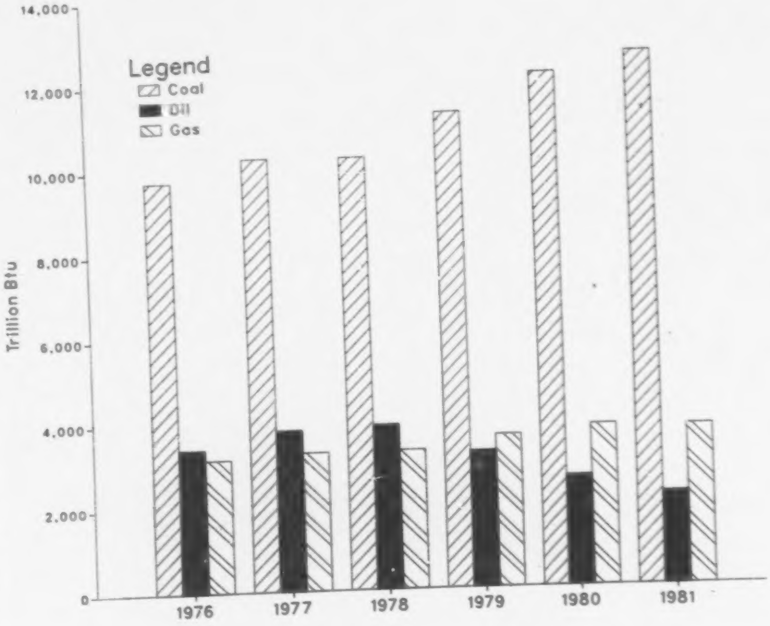
Table 49. Consumption of Coal, Oil, and Gas by Electric Utilities in the United States, 1976-198

(Million Btu)

Year	Coal	Oil	Gas
1981	12,630,495,066	2,180,275,820	3,761,756,916
1980	12,180,570,146	2,604,494,204	3,806,897,305
1979	11,291,379,911	3,232,485,206	3,607,127,501
1978	10,269,538,339	3,906,814,856	3,295,659,848
1977	10,281,755,605	3,820,822,136	3,284,441,501
1976	9,744,934,976	3,406,191,868	3,153,567,202

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4 and 423.

Figure 11. Consumption of Coal, Oil, and Gas by Electric Utilities, 1976-1981



Source : Federal Power Commission Form 4 and 423.

Fuel Consumption for Electric Energy (continued)

Table 50. Consumption of Coal by Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Short Tons)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	164,879,953	163,619,875	163,918,405	153,002,918	158,529,602	154,590,118
ERCOT	44,386,513	39,558,050	31,039,261	21,764,518	14,383,918	12,018,373
MAAC	36,816,196	38,800,481	36,175,758	33,633,937	32,515,907	33,852,778
MAIN	58,787,775	63,609,196	63,502,139	60,607,661	60,368,535	57,913,411
MARCA(U.S.)	46,677,264	44,844,522	39,183,067	36,635,289	35,110,760	30,128,346
NPCC(U.S.)	8,233,994	8,211,914	7,424,576	7,068,548	7,609,398	6,787,974
SERC	119,472,549	116,439,397	106,420,432	100,117,195	103,840,859	100,915,978
SWPP	44,906,344	30,306,709	20,961,577	18,487,067	12,114,549	7,385,521
WSCC(U.S.)	72,315,721	63,610,791	58,161,319	49,648,183	52,401,517	44,526,106
Contiguous U.S	**596,476,309**	**569,000,935**	**526,786,554**	**480,965,316**	**476,875,045**	**448,118,605**
Alaska	320,524	272,800	264,694	269,511	250,918	252,369
Hawaii	-	-	-	-	-	-
Total U.S.	**596,796,833**	**569,273,735**	**527,051,248**	**481,234,827**	**477,125,963**	**448,370,974**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 51. Consumption of Oil by Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Barrels)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	8,595,254	13,485,528	20,476,721	30,788,441	20,736,675	17,962,835
ERCOT	1,344,001	1,527,315	4,169,617	5,385,850	3,292,883	2,534,504
MAAC	39,047,525	46,984,607	53,165,669	70,300,835	65,283,268	54,957,288
MAIN	10,450,663	13,502,906	13,751,397	14,840,352	10,870,893	7,864,063
MARCA(U.S.)	559,589	1,036,779	9,873,795	13,512,572	11,441,701	11,506,650
NPCC(U.S.)	130,086,008	141,064,122	139,013,667	161,663,961	156,005,375	154,340,673
SERC	84,208,398	88,569,144	101,001,498	115,191,400	106,629,746	113,733,502
SWPP	8,598,819	17,215,024	34,591,541	59,527,353	55,455,417	37,096,309
WSCC(U.S.)	46,439,490	68,235,276	106,560,670	107,239,996	135,358,814	104,626,869
Contiguous U.S	**329,329,747**	**391,620,701**	**482,604,575**	**578,450,760**	**565,074,772**	**504,622,491**
Alaska	2,507	3,412	1,850	760	3,161	14,637
Hawaii	10,348,103	10,238,973	9,999,478	9,867,219	9,790,669	9,439,579
Total U.S.	**339,680,357**	**401,863,086**	**492,605,903**	**588,318,739**	**574,868,602**	**514,078,707**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 52. Consumption of Gas by Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Thousand Cubic Feet)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	17,394,969	15,699,743	27,867,864	23,750,314	20,556,269	39,667,147
ERCOT	1,018,115,615	1,066,981,984	1,059,333,802	1,142,167,380	1,136,078,586	1,043,842,015
MAAC	75,317,968	72,338,226	31,829,942	2,169,974	7,295,244	11,759,552
MAIN	11,599,831	20,342,496	39,805,038	22,906,416	11,792,805	32,269,233
MARCA(U.S.)	11,640,632	23,925,396	26,827,309	19,656,501	29,562,545	51,963,668
NPCC(U.S.)	129,906,487	121,006,335	79,753,139	2,628,698	6,915,968	8,160,927
SERC	176,765,558	166,324,233	175,054,251	169,557,162	150,921,541	139,948,681
SWPP	1,195,354,450	1,296,836,353	1,224,883,959	1,176,192,439	1,167,860,441	1,182,366,586
WSCC(U.S.)	759,498,294	638,516,391	587,366,570	434,591,975	484,994,474	423,335,615
Contiguous U.S	**3,395,593,804**	**3,421,971,157**	**3,252,721,874**	**2,993,640,859**	**3,017,977,913**	**2,933,313,424**
Alaska	908,888	803,313	831,982	730,343	1,152,986	847,786
Hawaii	–	–	–	–	–	–
Total U.S.	**3,396,502,692**	**3,422,774,470**	**3,253,553,856**	**2,994,371,202**	**3,019,130,899**	**2,934,161,210**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 53. Consumption of Oil by Gas Turbine/Internal Combustion Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Barrels)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	710,560	1,433,419	3,414,069	6,527,661	6,305,672	5,979,484
ERCOT	93,208	130,051	191,575	131,365	217,536	88,263
MAAC	2,403,358	4,476,975	4,207,353	6,611,044	7,577,977	5,698,649
MAIN	254,349	739,852	3,731,876	5,281,308	4,784,085	4,334,686
MARCA(U.S.)	93,445	292,142	1,613,349	2,863,296	2,097,001	2,343,185
NPCC(U.S.)	1,209,069	1,293,403	1,936,074	2,176,510	3,972,733	5,527,492
SERC	3,727,304	4,827,526	7,231,163	15,207,167	16,487,341	12,139,375
SWPP	294,338	758,230	1,327,381	2,578,413	2,115,509	2,152,320
WSCC(U.S.)	1,093,215	2,623,898	5,323,119	4,477,110	3,824,415	2,330,061
Contiguous U.S	**9,878,866**	**16,575,496**	**28,975,979**	**45,853,874**	**47,382,269**	**40,593,515**
Alaska	772,909	887,930	919,992	890,913	905,351	802,679
Hawaii	779,154	887,720	795,142	775,523	548,971	447,290
Total U.S.	**11,430,929**	**18,351,146**	**30,691,113**	**47,520,310**	**48,836,591**	**41,843,484**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 54. Consumption of Gas by Gas Turbine/Internal Combustion Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Thousand Cubic Feet)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	9,098,526	16,440,060	17,471,949	18,890,004	15,741,743	21,689,916
ERCOT	37,379,831	41,103,935	30,297,932	36,746,171	34,659,019	18,240,892
MAAC	19,682,985	22,118,382	6,300,117	532,773	1,501,457	1,027,291
MAIN	7,892,895	12,405,080	11,721,168	7,097,256	7,681,104	8,928,013
MARCA(U.S.)	4,220,941	5,619,539	15,165,132	5,349,829	7,215,331	11,075,292
NPCC(U.S.)	10,425,939	10,385,499	5,413,049	189,930	661,461	771,590
SERC	17,722,192	27,092,411	23,207,889	18,874,307	13,082,256	8,952,890
SWPP	43,776,226	46,342,053	48,004,820	45,990,538	36,131,091	34,031,817
WSCC(U.S.)	65,289,466	49,354,617	51,923,656	36,620,041	33,014,413	20,633,325
Contiguous U.S	**215,489,003**	**230,861,576**	**209,505,712**	**170,290,849**	**149,687,875**	**125,351,026**
Alaska	28,161,974	27,959,269	27,462,962	23,701,093	22,380,989	21,356,043
Hawaii	-	-	-	-	-	-
Total U.S.	**243,650,977**	**258,820,845**	**236,968,674**	**193,991,942**	**172,068,864**	**146,707,069**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 55. Consumption of Fossil Fuels by Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Million Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	3,866,987,463	3,874,226,110	3,876,774,818	3,633,703,290	3,699,718,032	3,630,322,260
ERCOT	1,714,246,018	1,692,170,961	1,567,581,374	1,517,840,133	1,391,549,269	1,242,634,106
MAAC	1,215,184,989	1,312,184,880	1,241,341,605	1,247,847,370	1,189,936,054	1,164,795,651
MAIN	1,299,159,164	1,437,527,913	1,455,112,597	1,381,548,331	1,352,513,051	1,301,153,602
MARCA(U.S.)	810,389,116	811,881,552	777,131,989	746,568,073	728,817,137	659,746,853
NPCC(U.S.)	1,148,888,372	1,208,867,911	1,129,684,571	1,173,803,807	1,154,384,002	1,124,346,940
SERC	3,568,158,699	3,508,550,074	3,325,468,677	3,224,887,426	3,210,498,836	3,183,196,245
SWPP	2,086,775,141	1,990,656,080	1,867,840,831	1,925,412,353	1,775,081,752	1,595,595,733
WSCC(U.S.)	2,470,642,396	2,309,360,119	2,393,423,732	2,065,913,504	2,347,671,115	1,938,421,460
Contiguous U.S	**18,180,431,358**	**18,145,425,600**	**17,634,360,194**	**16,917,524,287**	**16,850,169,248**	**15,840,212,850**
Alaska	7,114,968	6,603,273	6,508,126	6,519,320	6,069,314	5,815,507
Hawaii	63,513,676	62,707,546	61,276,481	60,613,951	59,856,684	57,783,590
Total U.S.	**18,251,060,002**	**18,214,736,419**	**17,702,144,801**	**16,984,657,558**	**16,916,095,246**	**15,903,811,947**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4 and 423.

Fuel Consumption for Electric Energy (continued)

Table 56. Consumption of Coal by Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981
(Million Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	3,800,482,917	3,778,964,633	3,730,782,898	3,428,183,381	3,561,208,979	3,492,499,946
ERCOT	653,369,471	570,110,617	436,226,055	299,131,535	196,196,642	157,296,468
MAAC	897,063,432	948,749,361	882,399,089	816,699,258	785,649,345	618,763,289
MAIN	1,222,197,842	1,333,121,530	1,330,750,825	1,268,760,775	1,274,862,722	1,220,930,531
MARCA(U.S.)	795,380,579	781,909,086	689,857,078	644,707,816	629,957,256	537,911,489
NPCC(U.S.)	204,120,711	206,004,075	184,471,015	171,596,071	186,932,471	168,165,268
SERC	2,861,606,494	2,784,298,861	2,515,353,331	2,339,738,847	2,399,346,886	2,340,039,698
SWPP	804,272,621	548,551,433	390,598,026	343,304,834	232,357,050	151,462,265
WSCC(U.S.)	1,385,858,477	1,223,108,289	1,125,305,200	951,656,372	1,010,406,051	853,031,139
Contiguous U.S	**12,624,352,544**	**12,174,817,885**	**11,285,743,517**	**10,263,778,889**	**10,276,917,404**	**9,740,100,081**
Alaska	6,142,522	5,752,261	5,636,394	5,759,450	4,838,201	4,834,885
Hawaii	-	-	-	-	-	-
Total U.S.	**12,630,495,066**	**12,180,570,146**	**11,291,379,911**	**10,269,538,339**	**10,281,755,605**	**9,744,934,976**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4 and 423.

Table 57. Consumption of Oil by Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981
(Million Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	52,640,756	82,638,884	125,787,719	166,543,406	123,872,975	106,723,271
ERCOT	8,145,001	9,198,135	25,410,830	33,118,096	19,717,448	15,399,575
MAAC	240,092,142	288,565,455	325,871,206	428,876,149	396,758,017	333,861,228
MAIN	65,152,694	83,738,407	83,919,853	89,445,918	65,562,704	47,179,376
MARCA(U.S.)	3,472,671	6,405,951	60,313,465	82,380,665	69,652,087	70,339,369
NPCC(U.S.)	810,963,979	877,743,266	863,227,329	999,552,751	960,431,803	947,882,009
SERC	526,781,633	554,600,495	629,984,522	710,504,702	656,155,525	700,408,892
SWPP	53,678,145	107,660,040	215,612,327	368,276,922	343,332,029	231,025,351
WSCC(U.S.)	285,032,215	417,725,169	651,971,000	656,631,782	827,535,872	640,464,590
Contiguous U.S	**2,045,959,236**	**2,428,275,822**	**2,982,098,251**	**3,555,330,395**	**3,463,018,460**	**3,093,283,659**
Alaska	15,387	21,190	11,463	4,695	19,325	89,599
Hawaii	63,513,676	62,707,546	61,276,481	60,613,951	59,856,684	57,783,590
Total U.S.	**2,109,488,299**	**2,491,004,558**	**3,043,386,195**	**3,615,949,041**	**3,522,894,469**	**3,151,156,848**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4 and 423.

Table 58. Consumption of Oil by Gas Turbine/Internal Combustion Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Million Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	4,351,875	8,783,946	20,972,619	39,550,301	37,667,676	35,526,530
ERCOT	564,865	783,222	1,167,512	807,776	1,302,583	536,284
MAAC	14,777,566	27,496,246	25,788,356	40,331,229	46,055,034	34,618,848
MAIN	1,585,691	4,588,200	22,774,303	31,831,552	28,852,969	26,005,359
MARCA(U.S.)	579,897	1,805,059	9,855,043	17,456,353	12,765,628	14,323,730
NPCC(U.S.)	7,537,409	8,047,942	12,022,357	13,457,152	24,457,741	33,947,048
SERC	23,316,859	30,228,905	45,103,497	93,796,354	101,456,304	74,758,326
SWPP	1,837,405	4,741,851	8,273,691	15,951,827	13,097,404	13,404,042
WSCC(U.S.)	6,709,839	16,063,074	32,568,481	27,413,398	23,381,120	14,263,273
Contiguous U.S	**61,261,406**	**102,538,445**	**178,525,859**	**280,597,942**	**289,036,459**	**247,383,440**
Alaska	4,743,892	5,514,450	5,700,548	5,503,864	5,534,995	4,913,532
Hawaii	4,782,223	5,436,751	4,872,604	4,764,009	3,356,215	2,738,048
Total U.S.	**70,787,521**	**113,489,646**	**189,099,011**	**290,865,815**	**297,927,669**	**255,035,020**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4 and 423.

Table 59. Consumption of Gas by Steam Units by NERC Region, Alaska, and Hawaii, 1976-1981

(Million Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	13,863,790	12,622,593	20,204,201	18,976,501	14,636,078	31,099,043
ERCOT	1,052,731,546	1,112,862,209	1,105,944,489	1,185,590,500	1,175,635,179	1,069,938,065
MAAC	78,029,415	74,870,064	33,071,310	2,271,963	7,528,692	12,171,136
MAIN	11,808,628	20,667,976	40,441,919	23,341,638	12,087,625	33,043,695
MARCA(U.S.)	11,535,866	23,566,515	26,961,446	19,479,592	29,207,794	51,495,995
NPCC(U.S.)	133,803,682	125,120,550	81,986,227	2,654,985	7,019,728	8,299,663
SERC	179,770,572	169,650,718	180,130,824	174,643,877	154,996,423	142,747,655
SWPP	1,228,824,375	1,334,444,607	1,261,630,478	1,213,830,597	1,199,392,673	1,213,108,117
WSCC(U.S.)	799,751,704	668,526,661	616,147,532	457,625,350	509,729,192	444,925,731
Contiguous U.S	**3,510,119,578**	**3,542,331,893**	**3,366,518,426**	**3,098,415,003**	**3,110,233,384**	**3,006,829,100**
Alaska	957,059	829,822	860,269	755,175	1,211,788	891,023
Hawaii	-	-	-	-	-	-
Total U.S.	**3,511,076,637**	**3,543,161,715**	**3,367,378,695**	**3,099,170,178**	**3,111,445,172**	**3,007,720,123**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4 and 423.

Table 60. Consumption of Gas by Gas Turbine/Internal Combustion Units by NERC Region, Alaska, and Hawaii, 1976-1981
(Million Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	7,251,527	13,217,808	12,667,163	15,093,113	11,208,121	17,004,894
ERCOT	38,650,745	42,871,404	31,631,042	38,142,525	35,802,767	18,696,914
MAAC	20,391,572	22,892,525	6,545,822	557,813	1,549,504	1,063,246
MAIN	8,034,967	12,603,561	11,908,707	7,232,104	7,873,132	9,142,286
MARCA(U.S.)	4,182,953	5,535,246	15,240,957	5,301,680	7,128,747	10,975,614
NPCC(U.S.)	10,738,717	10,738,605	5,564,614	191,830	671,383	784,707
SERC	18,023,470	27,634,259	23,880,918	19,440,536	13,435,477	9,131,948
SWPP	45,001,961	47,685,973	49,444,964	47,462,235	37,106,631	34,916,644
WSCC(U.S.)	68,749,808	51,674,284	54,467,916	38,560,904	34,698,148	21,685,625
Contiguous U.S	**221,025,720**	**234,853,665**	**211,352,103**	**171,982,740**	**149,473,910**	**123,401,878**
Alaska	29,654,559	28,881,925	28,396,703	24,506,930	23,522,419	22,445,201
Hawaii	-	-	-	-	-	-
Total U.S.	**250,680,279**	**263,735,590**	**239,748,806**	**196,489,670**	**172,996,329**	**145,847,079**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4 and 423.

Fuel Consumption for Electric Energy (continued)

Table 61. Consumption of Coal by Steam Units by Census Region and State, 1976-1981
(Short Tons)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**1,749,066**	**1,765,611**	**1,150,442**	**801,769**	**980,609**	**770,556**
Connecticut	-	-	9,064	15,700	9,704	10,986
Maine	-	-	-	-	-	0
Massachusetts	844,598	676,319	49,545	0	0	0
New Hampshire	890,033	1,080,149	1,079,265	779,388	958,885	750,914
Rhode Island	0	0	0	0	0	0
Vermont	14,435	9,143	12,568	6,681	12,020	8,656
Middle Atlantic	**48,937,529**	**51,457,808**	**49,931,343**	**44,864,906**	**45,660,406**	**46,068,250**
New Jersey	2,767,553	2,545,389	2,208,915	2,221,981	2,580,617	2,604,180
New York	6,484,928	6,446,303	6,274,134	6,266,779	6,628,789	6,017,418
Pennsylvania	39,685,048	42,466,116	41,448,294	36,376,146	36,451,090	37,446,652
East North Central	**150,340,090**	**152,191,135**	**153,585,307**	**144,927,362**	**146,849,026**	**143,042,763**
Illinois	32,411,445	34,610,642	34,486,860	33,492,168	33,942,790	33,520,673
Indiana	32,219,429	33,664,366	31,592,991	28,869,175	29,878,779	28,936,691
Michigan	23,407,388	22,150,263	23,133,536	21,494,695	21,027,858	20,369,131
Ohio	48,460,449	48,536,801	52,074,887	49,656,353	50,507,142	49,348,734
Wisconsin	13,841,379	13,229,063	12,297,033	11,414,971	11,492,457	10,887,534
West North Central	**79,048,531**	**75,561,086**	**65,987,001**	**62,320,507**	**57,855,317**	**50,403,194**
Iowa	11,808,032	10,745,462	9,347,009	8,453,756	7,592,893	6,696,870
Kansas	11,327,056	10,034,367	7,629,810	7,349,240	4,513,180	3,506,796
Minnesota	12,575,673	12,609,645	11,066,363	12,117,164	12,726,993	9,947,287
Missouri	23,376,426	23,168,062	21,643,685	20,476,272	20,805,813	19,159,194
Nebraska	5,066,892	4,701,850	3,460,635	2,366,885	2,276,720	2,012,459
North Dakota	12,358,421	11,618,262	10,137,941	8,745,739	7,403,961	6,423,062
South Dakota	2,536,031	2,683,438	2,701,558	2,811,451	2,535,757	2,657,526
South Atlantic	**108,695,621**	**102,732,080**	**94,019,632**	**85,858,197**	**89,313,589**	**85,610,525**
Delaware	1,840,001	941,650	887,305	777,774	702,702	* 782,730
District of Columbia	-	-	-	-	-	20
Florida	9,401,345	8,785,312	8,154,952	7,184,157	6,780,146	6,067,946
Georgia	21,940,502	21,191,453	19,171,385	17,630,619	16,857,134	14,043,084
Maryland	5,196,545	5,907,779	5,284,595	4,844,496	4,422,549	5,083,177
North Carolina	24,949,573	23,919,782	21,138,464	18,998,192	21,234,949	20,961,000
South Carolina	8,679,175	7,926,538	6,847,567	6,495,296	6,455,065	5,550,731
Virginia	6,549,517	5,560,294	5,162,237	4,320,146	5,018,840	5,668,614
West Virginia	30,138,963	28,499,272	27,373,127	25,607,515	27,842,204	27,433,223
East South Central	**69,245,391**	**68,726,755**	**64,540,052**	**64,346,215**	**66,810,934**	**67,017,842**
Alabama	19,504,170	19,592,879	18,697,695	16,597,092	18,808,565	17,849,577
Kentucky	25,910,160	24,383,034	23,187,049	24,472,501	24,726,186	25,095,488
Mississippi	3,334,355	3,071,992	2,482,131	1,655,436	1,581,719	1,710,790
Tennessee	20,496,706	21,678,850	20,173,177	21,621,186	21,694,464	22,361,987
West South Central	**66,142,348**	**52,876,806**	**39,362,105**	**28,143,984**	**16,947,814**	**12,351,121**
Arkansas	5,555,401	1,773,692	1,451,207	959,633	0	-
Louisiana	1,077,008	-	-	-	-	-
Oklahoma	8,367,687	5,752,207	2,975,247	2,074,732	437,567	0
Texas	51,142,252	45,350,907	34,935,651	25,109,619	16,510,247	12,351,121
Mountain	**66,156,128**	**58,254,477**	**53,044,748**	**45,469,372**	**47,086,859**	**38,747,456**
Arizona	14,025,836	10,916,205	9,811,373	7,006,606	7,550,743	6,286,481
Colorado	11,781,170	10,124,132	9,515,140	8,945,107	8,837,337	7,280,219
Idaho	-	-	-	-	-	-
Montana	3,337,922	3,351,589	3,461,360	3,184,186	3,196,664	2,373,698
Nevada	4,876,811	4,063,861	4,380,550	4,042,910	5,048,426	4,849,873
New Mexico	10,619,459	11,405,669	8,467,040	7,995,778	8,571,403	7,690,288
Utah	4,955,589	4,894,967	4,151,472	3,148,276	2,511,184	1,266,877
Wyoming	16,559,341	13,498,054	13,257,813	11,146,509	11,371,102	9,000,020
Pacific	**6,161,605**	**5,435,177**	**5,165,924**	**4,233,004**	**5,370,401**	**4,106,898**
California	-	-	-	-	-	-
Oregon	1,197,223	484,763	-	-	-	-
Washington	4,964,382	4,950,414	5,165,924	4,233,004	5,370,401	4,106,898
Pacific Noncontiguous	**320,524**	**272,800**	**264,694**	**269,511**	**250,918**	**252,369**
Alaska	320,524	272,800	264,694	269,511	250,918	252,369
Hawaii	-	-	-	-	-	-
Total U.S.	**596,796,833**	**569,273,735**	**527,051,248**	**481,234,827**	**477,125,963**	**448,370,974**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 62. Consumption of Oil by Steam Units by Census Region and State, 1976-1981

(Barrels)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**67,666,672**	**77,001,985**	**71,095,688**	**74,477,736**	**70,698,556**	**71,762,03**
Connecticut	18,258,760	21,467,827	18,276,740	19,662,900	18,832,308	19,705,432
Maine	3,739,689	3,630,478	2,230,225	1,741,665	1,305,362	1,855,672
Massachusetts	40,433,905	45,985,784	45,368,088	48,408,990	46,571,347	46,194,15
New Hampshire	3,998,253	4,358,501	4,307,793	3,498,718	2,830,072	3,054,889
Rhode Island	1,227,710	1,634,074	901,323	1,155,775	1,142,188	935,763
Vermont	8,355	22,321	11,519	9,688	17,279	16,127
Middle Atlantic	**88,623,959**	**95,304,908**	**106,567,645**	**139,891,477**	**132,774,596**	**120,258,57**
New Jersey	10,059,407	13,339,842	18,853,124	26,471,163	25,900,939	23,012,157
New York	62,419,336	64,062,137	67,917,979	87,186,225	85,306,819	82,578,634
Pennsylvania	16,145,216	17,902,929	19,796,542	26,234,089	21,566,838	14,667,787
East North Central	**17,572,097**	**25,711,103**	**32,280,140**	**40,869,712**	**28,921,052**	**24,183,38**
Illinois	10,031,755	13,165,550	13,028,361	13,055,290	9,532,702	6,880,457
Indiana	524,980	484,641	905,910	3,243,821	1,655,206	1,166,96
Michigan	5,884,811	10,125,037	15,088,520	19,284,589	14,104,001	14,126,537
Ohio	849,739	1,624,358	2,715,402	3,716,040	2,599,899	1,225,85
Wisconsin	280,812	311,517	541,947	1,369,872	1,029,244	783,57
West North Central	**1,250,788**	**1,743,048**	**4,484,195**	**7,939,645**	**7,047,943**	**7,316,61**
Iowa	151,061	154,108	329,765	380,081	339,189	366,279
Kansas	475,208	577,451	2,067,674	3,926,616	3,747,801	4,117,874
Minnesota	183,986	443,799	794,694	1,319,596	1,305,110	1,046,06
Missouri	238,556	239,442	600,711	1,183,258	866,297	602,40
Nebraska	72,193	220,091	545,556	928,779	610,457	999,59
North Dakota	86,109	56,770	61,313	47,454	74,567	29,77
South Dakota	43,675	51,387	84,460	153,861	104,522	154,63
South Atlantic	**97,693,902**	**104,999,037**	**124,409,613**	**143,113,870**	**132,278,606**	**138,375,9**
Delaware	5,226,250	5,953,409	6,871,317	8,051,738	7,574,378	6,871,05
District of Columbia	818,125	1,494,118	2,236,109	3,634,654	3,629,789	2,624,97
Florida	74,670,156	69,929,189	70,076,073	72,150,807	64,837,379	74,449,99
Georgia	637,316	823,310	2,349,784	5,333,924	6,250,206	6,833,39
Maryland	6,996,076	8,639,105	14,094,356	18,940,143	16,523,761	17,022,62
North Carolina	275,301	335,667	235,752	1,315,609	328,939	625,70
South Carolina	1,717,391	2,178,423	3,463,130	5,664,149	5,059,021	4,263,714
Virginia	6,537,855	14,969,817	24,298,249	26,521,775	27,173,239	24,948,33
West Virginia	815,432	675,999	784,843	1,501,071	901,894	736,18
East South Central	**3,445,366**	**5,654,880**	**10,611,557**	**20,036,992**	**16,950,324**	**12,782,3**
Alabama	66,257	81,588	29,699	89,181	187,974	142,094
Kentucky	321,799	222,756	148,488	172,485	151,536	126,994
Mississippi	2,869,749	5,143,646	10,378,625	19,775,326	16,610,814	12,513,21
Tennessee	187,561	206,890	54,745	-	-	-
West South Central	**6,863,720**	**13,030,114**	**26,672,906**	**45,170,904**	**41,049,010**	**25,370,92**
Arkansas	733,955	3,165,699	7,708,592	13,495,065	13,781,937	8,582,21
Louisiana	4,530,597	8,238,935	14,474,695	24,785,904	22,309,802	13,015,06
Oklahoma	4,174	2,460	58,721	136,658	133,794	42,10
Texas	1,394,994	1,623,020	4,430,898	6,753,257	4,823,477	3,731,53
Mountain	**1,317,882**	**4,973,641**	**7,898,109**	**8,638,901**	**10,318,279**	**7,691,85**
Arizona	486,007	1,546,277	4,730,838	4,431,049	6,980,603	5,186,89
Colorado	165,842	314,195	411,046	555,739	439,021	640,33
Idaho	-	-	-	-	-	-
Montana	37,525	47,367	129,112	94,338	190,731	77,56
Nevada	233,281	2,440,250	1,441,542	2,801,214	1,359,442	606,48
New Mexico	172,815	384,328	795,693	425,503	969,517	976,97
Utah	77,026	123,288	246,810	176,804	285,908	75,71
Wyoming	145,386	117,936	141,068	154,254	93,057	127,8
Pacific	**45,095,361**	**63,201,985**	**98,584,722**	**98,511,523**	**125,036,406**	**96,880,8**
California	45,037,448	62,941,392	98,079,926	98,480,444	125,002,240	96,840,84
Oregon	35,164	33,861	0	0	0	0
Washington	22,749	226,732	504,796	31,079	34,166	39,96
Pacific Noncontiguous	**10,350,610**	**10,242,385**	**10,001,328**	**9,867,979**	**9,793,830**	**9,454,2**
Alaska	2,507	3,412	1,850	760	3,161	14,63
Hawaii	10,348,103	10,238,973	9,999,478	9,867,219	9,790,669	9,439,57
Total U.S.	**339,680,357**	**401,863,086**	**492,605,903**	**588,318,739**	**574,868,602**	**514,076,7**

Note Totals may not equal sum of components because of independent rounding.
Source Federal Power Commission Form 4.

Table 63. Consumption of Gas by Steam Units by Census Region and State, 1976-1981

(Thousand Cubic Feet)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**9,182,859**	**6,608,622**	**8,455,820**	**1,477,765**	**3,431,978**	**3,008,777**
Connecticut	–	–	–	–	0	0
Maine	–	–	–	–	–	–
Massachusetts	6,387,113	4,691,034	6,169,970	1,438,645	2,992,318	2,310,390
New Hampshire	–	–	–	–	–	–
Rhode Island	2,603,214	1,678,828	1,751,569	0	0	634,813
Vermont	192,532	238,760	534,281	39,120	439,660	63,574
Middle Atlantic	**190,431,319**	**179,887,800**	**98,034,542**	**1,861,366**	**9,505,608**	**14,676,210**
New Jersey	69,633,672	65,339,359	26,686,688	685,335	6,005,062	9,462,452
New York	120,723,628	114,397,713	71,297,319	1,150,933	3,484,010	5,152,150
Pennsylvania	74,019	150,728	50,535	25,098	16,536	61,608
East North Central	**28,743,268**	**36,416,429**	**68,838,020**	**46,541,886**	**32,824,358**	**72,582,116**
Illinois	6,536,452	10,405,820	26,099,027	18,408,418	9,284,286	25,556,582
Indiana	4,138,842	1,132,142	2,231,872	2,846,049	587,513	2,214,099
Michigan	12,767,778	14,693,623	24,319,931	18,251,887	17,721,806	33,815,910
Ohio	642,625	782,827	2,329,697	2,769,419	2,725,398	4,403,955
Wisconsin	4,657,571	9,402,017	13,857,493	4,266,113	2,505,355	6,591,570
West North Central	**86,234,901**	**123,199,610**	**142,327,361**	**144,442,738**	**166,415,356**	**182,408,338**
Iowa	3,110,490	6,005,538	7,683,049	7,708,894	12,127,636	22,464,562
Kansas	68,642,142	88,629,987	101,976,887	104,540,981	116,975,973	110,713,495
Minnesota	4,402,046	6,190,378	5,535,828	659,922	3,756,493	10,831,187
Missouri	6,236,137	11,485,863	14,615,625	20,481,804	20,174,938	20,562,176
Nebraska	3,781,825	10,633,239	12,401,697	11,020,627	13,207,342	16,738,331
North Dakota	16,794	13,416	12,611	8,908	10,554	11,794
South Dakota	45,467	241,209	101,664	21,602	162,420	1,086,793
South Atlantic	**174,294,960**	**162,696,393**	**165,435,088**	**156,925,762**	**139,923,623**	**132,091,648**
Delaware	5,684,296	6,998,867	5,143,254	1,464,639	1,290,182	2,297,100
District of Columbia	–	–	–	–	–	–
Florida	162,591,503	149,216,258	152,313,077	145,007,361	129,312,485	120,782,924
Georgia	2,425,905	3,351,398	2,996,017	5,766,142	5,962,884	4,564,402
Maryland	–	–	–	242,090	253,838	162,666
North Carolina	38,092	50,556	431,312	4,417	902	5,566
South Carolina	2,628,415	2,051,490	2,713,663	3,515,143	2,344,860	3,731,903
Virginia	729,237	966,070	1,768,427	692,019	727,825	257,380
West Virginia	197,512	61,754	69,338	13,951	30,647	289,707
East South Central	**74,410,618**	**94,014,820**	**66,669,559**	**47,100,579**	**39,009,483**	**32,907,904**
Alabama	1,780,026	1,381,779	6,934,156	7,014,696	3,732,011	3,934,836
Kentucky	2,531,268	1,831,043	818,173	1,118,015	540,426	0
Mississippi	70,099,324	89,697,390	58,917,230	38,967,868	34,737,046	28,797,449
Tennessee	0	1,104,608	0	0	0	175,619
West South Central	**2,053,878,329**	**2,164,706,624**	**2,098,756,169**	**2,144,441,117**	**2,122,158,463**	**2,049,602,837**
Arkansas	54,884,251	58,642,482	30,139,302	6,950,259	6,827,678	15,907,674
Louisiana	415,431,141	424,142,730	400,284,067	367,613,496	348,071,312	362,881,289
Oklahoma	258,260,649	307,060,292	316,490,069	332,709,197	326,229,414	325,420,897
Texas	1,325,302,288	1,374,861,120	1,351,842,731	1,437,168,165	1,441,030,059	1,345,392,977
Mountain	**162,746,820**	**153,483,868**	**172,075,127**	**158,259,751**	**153,418,971**	**153,432,200**
Arizona	52,245,655	39,753,300	41,314,089	43,634,033	19,691,976	19,893,030
Colorado	12,033,731	26,288,800	27,873,754	22,973,598	28,476,017	37,965,466
Idaho	–	–	–	–	–	–
Montana	2,057,350	4,104,553	2,156,653	668,396	747,864	423,581
Nevada	39,807,863	23,548,293	35,385,206	19,735,005	31,401,348	24,433,752
New Mexico	53,869,734	55,125,621	59,298,057	61,382,913	67,531,263	67,815,057
Utah	2,624,707	4,441,017	5,560,990	7,153,151	4,816,879	2,341,432
Wyoming	107,780	222,284	466,378	712,655	753,624	559,882
Pacific	**615,670,730**	**500,956,991**	**432,130,188**	**294,589,895**	**351,290,073**	**292,603,394**
California	615,670,730	500,956,991	432,130,188	294,589,895	351,290,073	292,603,394
Oregon	0	0	0	0	0	0
Washington	–	–	–	–	–	–
Pacific Noncontiguous	**908,888**	**803,313**	**831,982**	**730,343**	**1,152,986**	**847,786**
Alaska	908,888	803,313	831,982	730,343	1,152,986	847,786
Hawaii	–	–	–	–	–	–
Total U.S.	**3,396,502,692**	**3,422,774,470**	**3,253,553,856**	**2,994,371,202**	**3,019,130,890**	**2,934,161,210**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 64. Consumption of Oil by Gas Turbine/Internal Combustion Units by Census Region and State, 1976-1981
(Barrels)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**463,325**	**708,723**	**683,394**	**507,743**	**539,449**	**695,2**
Connecticut	54,090	128,256	132,644	78,003	118,611	203,60
Maine	24,222	49,995	37,594	27,288	26,717	38,67
Massachusetts	345,317	453,364	453,574	360,193	347,803	373,48
New Hampshire	5,078	7,693	6,561	7,328	9,536	20,62
Rhode Island	18,543	28,109	21,334	15,199	7,872	9,14
Vermont	16,075	41,106	31,687	19,727	28,910	49,76
Middle Atlantic	**2,804,596**	**4,546,769**	**5,406,129**	**8,369,220**	**11,145,748**	**10,661,8**
New Jersey	1,135,774	2,400,490	2,195,441	3,008,294	4,128,706	2,897,12
New York	745,744	584,680	1,252,680	1,668,767	3,433,284	4,832,19
Pennsylvania	923,078	1,561,599	1,958,008	3,692,159	3,583,758	2,932,57
East North Central	**789,979**	**1,843,134**	**6,455,825**	**10,929,943**	**10,274,965**	**9,748,9**
Illinois	135,646	442,539	2,936,133	4,138,544	4,051,243	3,910,67
Indiana	218,116	245,266	543,663	835,960	645,984	418,20
Michigan	146,333	275,296	521,050	1,138,820	1,654,063	1,762,60
Ohio	206,242	623,789	1,678,986	3,448,302	3,217,507	2,949,17
Wisconsin	83,642	256,244	775,993	1,268,317	696,168	708,28
West North Central	**330,582**	**854,069**	**2,591,069**	**4,374,086**	**3,217,428**	**3,467,21**
Iowa	30,279	76,891	495,859	762,504	553,757	478,23
Kansas	153,196	297,116	575,115	761,021	796,779	1,100,35
Minnesota	26,310	84,710	457,970	913,560	599,075	878,01
Missouri	84,810	326,959	645,353	1,485,002	934,683	689,21
Nebraska	20,908	41,648	204,927	338,215	277,785	279,87
North Dakota	4,455	11,240	145,308	26,159	21,276	17,58
South Dakota	10,624	15,505	66,537	87,625	34,073	23,95
South Atlantic	**4,054,606**	**5,389,537**	**7,320,016**	**10,085,503**	**12,694,629**	**9,783,69**
Delaware	24,287	64,506	115,540	176,398	188,444	110,47
District of Columbia	45,189	77,456	93,204	234,736	125,343	65,33
Florida	2,436,594	3,264,886	4,979,806	5,046,529	5,374,304	5,418,78
Georgia	211,181	261,479	218,910	1,282,549	2,413,640	2,034,67
Maryland	397,654	610,885	600,275	753,281	561,785	582,57
North Carolina	204,629	224,994	162,581	639,227	859,350	227,54
South Carolina	386,112	469,060	421,677	858,409	1,563,760	306,97
Virginia	338,322	409,353	726,270	1,092,464	1,593,110	1,005,91
West Virginia	10,638	6,918	1,753	1,910	14,893	31,41
East South Central	**167,774**	**257,026**	**811,899**	**6,660,836**	**5,110,084**	**3,596,45**
Alabama	30,099	49,143	108,395	1,075,165	839,508	631,15
Kentucky	1,448	4,114	9,683	67,745	89,984	120,98
Mississippi	2,008	4,995	49,029	341,183	442,020	358,81
Tennessee	134,219	198,774	644,782	5,176,743	3,738,572	2,485,50
West South Central	**183,501**	**370,243**	**496,072**	**578,283**	**579,219**	**320,00**
Arkansas	19,687	119,450	85,501	271,174	162,239	49,42
Louisiana	21,436	31,129	39,609	63,456	84,468	86,44
Oklahoma	36,897	56,839	60,171	84,344	71,759	51,26
Texas	105,481	162,825	310,791	159,309	260,753	132,88
Mountain	**66,711**	**244,771**	**1,167,586**	**1,611,426**	**1,499,408**	**1,661,94**
Arizona	13,014	75,649	599,777	1,193,565	1,204,762	1,100,98
Colorado	32,440	130,080	460,302	342,008	233,044	446,06
Idaho	384	346	1,117	4,660	1,350	2,58
Montana	1,010	11,288	17,434	3,733	4,583	3,54
Nevada	11,819	13,109	50,113	24,172	11,682	55,06
New Mexico	4,798	7,153	18,848	24,060	30,730	38,88
Utah	2,082	2,294	13,773	4,876	5,836	4,64
Wyoming	1,164	4,852	6,222	14,352	7,421	10,17
Pacific	**1,017,792**	**2,361,224**	**4,043,989**	**2,836,834**	**2,321,339**	**658,06**
California	1,001,896	2,280,498	3,073,517	2,681,928	2,041,199	635,33
Oregon	1,299	75,653	930,838	141,562	265,515	19,90
Washington	14,597	5,073	39,634	13,344	14,625	2,82
Pacific Noncontiguous	**1,552,063**	**1,775,650**	**1,715,134**	**1,666,436**	**1,454,322**	**1,249,96**
Alaska	772,909	887,930	919,992	890,913	905,351	802,67
Hawaii	779,154	887,720	795,142	775,523	548,971	447,23
Total U.S.	**11,430,929**	**18,351,146**	**30,691,113**	**47,520,310**	**48,836,591**	**41,843,48**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 65. Consumption of Gas by Gas Turbine/Internal Combustion Units by Census Region and State, 1976-1981

(Thousand Cubic Feet)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**642,711**	**392,046**	**746,149**	**118,738**	**56,472**	**630,673**
Connecticut	0	0	0	0	0	445,684
Maine	–	–	–	–	–	–
Massachusetts	504,595	392,046	716,309	118,738	56,362	177,819
New Hampshire	138,116	0	29,840	0	110	7,170
Rhode Island	–	–	–	–	–	–
Vermont	–	–	–	–	–	–
Middle Atlantic	**23,467,853**	**26,881,596**	**10,518,563**	**569,389**	**2,091,234**	**1,113,348**
New Jersey	10,491,820	14,174,241	4,040,205	84,473	1,179,541	553,814
New York	9,783,228	9,993,453	4,666,900	71,192	604,989	140,917
Pennsylvania	3,192,805	2,713,902	1,811,458	413,724	306,704	418,617
East North Central	**18,440,700**	**29,466,231**	**30,160,008**	**27,003,680**	**24,566,590**	**31,940,420**
Illinois	6,629,851	8,759,397	5,448,028	4,157,419	5,146,108	4,991,766
Indiana	1,170,441	771,655	541,818	297,039	479,841	942,632
Michigan	6,462,458	11,674,480	13,539,877	18,131,760	14,429,626	19,694,319
Ohio	1,408,154	3,923,262	3,274,371	371,440	651,332	917,937
Wisconsin	2,769,798	4,337,437	7,355,914	4,046,022	3,859,683	5,393,766
West North Central	**14,092,953**	**20,187,126**	**24,336,185**	**23,524,091**	**23,081,807**	**26,111,838**
Iowa	251,670	828,955	649,461	468,541	1,462,217	3,339,833
Kansas	10,474,923	12,391,997	14,850,686	13,553,512	12,077,896	12,232,456
Minnesota	1,151,032	1,886,544	1,429,760	876,344	1,448,370	2,611,694
Missouri	1,425,037	3,843,236	5,767,289	6,787,287	5,624,479	4,859,610
Nebraska	778,174	1,216,950	1,606,996	1,823,622	2,415,462	2,879,701
North Dakota	2,891	2,033	4,818	12,045	34,243	31,270
South Dakota	9,226	17,411	27,175	2,740	19,140	157,274
South Atlantic	**19,929,183**	**28,712,491**	**29,389,184**	**15,198,271**	**9,138,459**	**5,233,087**
Delaware	–	–	–	–	–	0
District of Columbia	–	–	–	–	–	–
Florida	8,876,390	16,830,885	15,130,496	13,034,851	8,153,996	4,777,463
Georgia	359,973	314,943	26,502	114,371	128,253	99,307
Maryland	5,998,360	5,230,239	9,819,853	276,452	63,255	68,620
North Carolina	863,693	1,651,476	160,176	–	–	0
South Carolina	2,379,994	3,365,972	2,463,191	1,669,167	158,767	61,250
Virginia	1,450,773	1,318,976	1,788,966	103,430	634,188	226,447
West Virginia	–	–	–	–	–	–
East South Central	**4,833,829**	**5,446,393**	**5,381,291**	**4,367,663**	**4,523,600**	**4,148,342**
Alabama	0	0	0	0	0	0
Kentucky	57,475	70,663	115,883	89,765	180,944	135,028
Mississippi	4,460,020	5,375,730	5,265,408	4,277,898	4,342,656	4,011,314
Tennessee	316,334	–	–	–	–	0
West South Central	**80,885,129**	**79,113,627**	**67,711,371**	**70,054,455**	**57,315,974**	**41,749,653**
Arkansas	30,342	220,931	114,656	43,211	77,422	64,083
Louisiana	480,433	847,986	1,114,984	1,569,309	1,914,205	2,962,017
Oklahoma	27,441,513	22,879,306	17,956,235	14,924,477	7,536,165	5,582,310
Texas	52,932,841	55,165,404	48,525,496	53,517,458	47,788,182	33,141,243
Mountain	**12,856,172**	**21,548,502**	**24,312,169**	**21,821,561**	**21,146,855**	**12,018,765**
Arizona	5,665,663	9,946,197	9,943,416	10,744,876	9,800,854	4,444,558
Colorado	1,559,165	5,639,641	7,535,263	6,466,640	5,800,017	4,202,196
Idaho	15,500	45,700	491,100	37,600	676,000	103,500
Montana	12,100	77,530	163,756	240,990	205,409	284,955
Nevada	4,441,611	3,993,115	4,442,332	2,013,777	1,466,620	671,138
New Mexico	690,028	1,154,458	1,111,625	1,895,851	2,671,262	1,848,430
Utah	472,105	691,861	624,677	421,827	526,673	463,968
Wyoming	–	–	–	–	–	–
Pacific	**40,340,473**	**19,113,564**	**16,950,792**	**7,633,001**	**7,766,884**	**2,406,900**
California	39,663,124	17,850,940	12,470,397	7,577,382	7,760,606	2,405,521
Oregon	186,127	321,364	2,380,127	0	6,278	1,379
Washington	491,222	941,240	2,100,268	55,619	0	0
Pacific Noncontiguous	**28,161,974**	**27,959,269**	**27,462,962**	**23,701,093**	**22,380,989**	**21,356,043**
Alaska	28,161,974	27,959,269	27,462,962	23,701,093	22,380,989	21,356,043
Hawaii	–	–	–	–	–	–
Total U.S.	**243,650,977**	**258,820,845**	**236,968,674**	**193,991,942**	**172,068,864**	**146,707,069**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Fuel Consumption for Electric Energy (continued)

Table 66. Consumption of Oil by All Units by Census Region and State 1976-1981

(Barrels)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**68,129,997**	**77,710,708**	**71,779,082**	**74,985,479**	**71,238,005**	**72,457,337**
Connecticut	18,312,850	21,596,083	18,409,384	19,740,908	18,950,919	19,909,038
Maine	3,763,911	3,680,473	2,267,819	1,768,953	1,332,079	1,894,345
Massachusetts	40,779,222	46,342,148	45,821,662	48,769,183	46,919,150	46,567,637
New Hampshire	4,003,331	4,366,394	4,314,354	3,506,046	2,839,608	3,075,517
Rhode Island	1,246,253	1,662,183	922,657	1,170,974	1,150,060	944,904
Vermont	24,430	63,427	43,206	29,415	46,189	65,896
Middle Atlantic	**91,428,555**	**99,851,677**	**111,973,774**	**148,260,697**	**143,920,344**	**130,920,466**
New Jersey	11,195,181	15,740,332	21,048,565	29,479,457	30,029,645	25,909,279
New York	63,165,080	64,646,817	69,170,659	88,854,992	88,740,103	87,410,828
Pennsylvania	17,068,294	19,464,528	21,754,550	29,926,248	25,150,596	17,600,359
East North Central	**18,362,076**	**27,554,237**	**38,735,965**	**51,499,655**	**39,196,017**	**33,932,328**
Illinois	10,167,401	13,608,069	15,964,494	17,193,834	13,593,945	10,791,130
Indiana	743,096	729,907	1,449,573	4,079,781	2,301,190	1,585,167
Michigan	6,031,144	10,400,333	15,609,570	20,423,409	15,758,064	15,889,145
Ohio	1,055,981	2,248,147	4,394,388	7,164,342	5,817,406	4,175,026
Wisconsin	364,454	567,761	1,317,940	2,638,289	1,725,412	1,491,860
West North Central	**1,581,370**	**2,597,117**	**7,075,284**	**12,313,731**	**10,265,371**	**10,783,835**
Iowa	181,340	230,999	825,624	1,142,585	892,946	844,512
Kansas	628,404	874,567	2,642,789	4,687,637	4,544,580	5,218,226
Minnesota	210,296	528,509	1,252,664	2,233,156	1,904,185	1,924,076
Missouri	323,366	566,401	1,246,064	2,668,260	1,800,980	1,291,611
Nebraska	93,101	261,739	750,485	1,266,994	888,242	1,279,472
North Dakota	90,564	68,010	206,621	73,613	95,843	47,355
South Dakota	54,299	66,892	151,017	241,486	138,595	178,583
South Atlantic	**101,748,500**	**110,388,574**	**131,729,629**	**153,199,373**	**144,973,235**	**148,159,686**
Delaware	5,250,537	6,017,915	6,986,857	8,228,136	7,762,822	6,981,543
District of Columbia	863,314	1,571,574	2,329,313	3,869,390	3,755,132	2,690,311
Florida	77,106,750	73,194,075	75,055,879	77,197,336	70,211,683	79,868,780
Georgia	848,497	1,084,789	2,568,694	6,616,473	8,663,846	8,868,062
Maryland	7,393,730	9,249,990	14,694,631	19,693,424	17,085,546	17,605,199
North Carolina	479,930	560,661	398,333	1,954,836	1,188,289	853,251
South Carolina	2,103,503	2,647,483	3,884,807	6,522,558	6,622,781	4,570,689
Virginia	6,876,177	15,379,170	25,024,519	27,614,239	28,766,349	25,954,249
West Virginia	826,070	682,917	786,596	1,502,981	916,797	767,602
East South Central	**3,613,140**	**5,911,906**	**11,423,456**	**26,697,828**	**22,060,408**	**16,378,758**
Alabama	96,356	130,731	138,094	1,164,346	1,027,482	773,253
Kentucky	323,247	226,870	158,171	240,230	241,520	247,974
Mississippi	2,871,757	5,148,641	10,427,664	20,116,509	17,052,834	12,872,025
Tennessee	321,780	405,664	699,527	5,176,743	3,738,572	2,485,506
West South Central	**6,847,221**	**13,400,357**	**27,168,978**	**45,749,187**	**41,628,229**	**25,690,931**
Arkansas	753,642	3,285,149	7,794,093	13,766,259	13,944,176	8,631,642
Louisiana	4,552,033	8,270,064	14,514,304	24,849,360	22,394,270	13,101,509
Oklahoma	41,071	59,299	118,892	221,002	205,553	93,363
Texas	1,500,475	1,785,845	4,741,689	6,912,566	5,084,230	3,864,417
Mountain	**1,384,593**	**5,218,412**	**9,065,695**	**10,250,327**	**11,817,687**	**9,353,796**
Arizona	499,021	1,621,926	5,330,615	5,624,614	8,185,365	6,287,878
Colorado	198,282	444,275	871,348	897,747	672,065	1,086,405
Idaho	384	346	1,117	4,660	1,350	2,589
Montana	38,535	58,655	146,546	98,071	195,314	81,108
Nevada	245,100	2,453,359	1,491,655	2,825,386	1,371,124	661,557
New Mexico	177,613	391,481	814,541	449,563	1,000,247	1,015,858
Utah	79,108	125,582	262,583	181,680	291,744	80,355
Wyoming	146,550	122,788	147,290	168,606	100,478	138,046
Pacific	**46,113,153**	**65,563,209**	**102,626,711**	**101,348,357**	**127,357,745**	**97,538,869**
California	46,039,344	65,221,890	101,153,443	101,162,372	127,043,439	97,476,178
Oregon	36,463	109,514	930,838	141,562	265,515	19,907
Washington	37,346	231,805	544,430	44,423	48,791	42,784
Pacific Noncontiguous	**11,902,673**	**12,018,035**	**11,716,462**	**11,534,415**	**11,248,152**	**10,704,185**
Alaska	775,416	891,342	921,842	891,673	908,512	817,316
Hawaii	11,127,257	11,126,693	10,794,620	10,642,742	10,339,640	9,886,869
Total U.S.	**351,111,286**	**420,214,232**	**523,297,016**	**635,839,049**	**623,705,193**	**555,920,191**

Note Totals may not equal sum of components because of independent rounding

Source Federal Power Commission Form 4

Table 67. Consumption of Gas by All Units by Census Region and State, 1976-1981

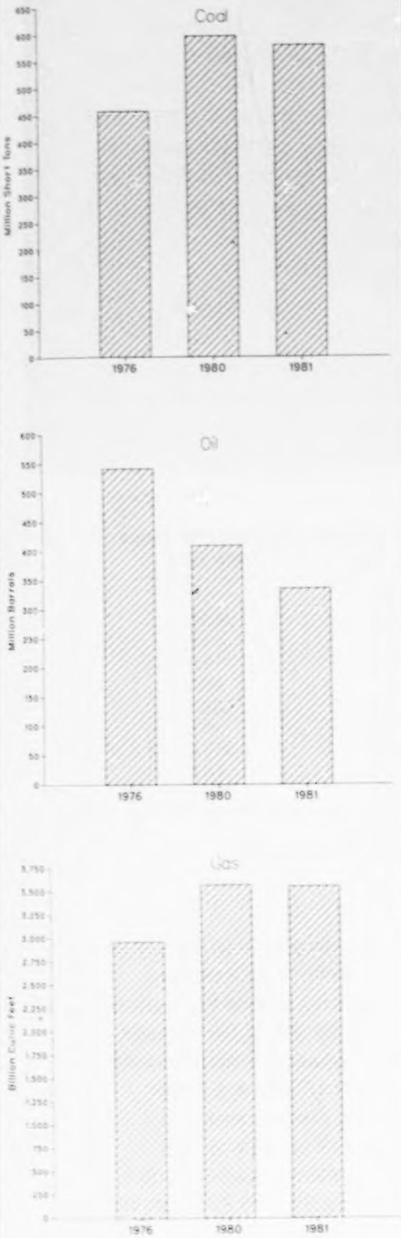
(Thousand Cubic Feet)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**9,825,570**	**7,000,668**	**9,201,969**	**1,596,503**	**3,488,450**	**3,839,450**
Connecticut	0	0	0	0	0	445,684
Maine	-	-	-	-	-	-
Massachusetts	6,891,708	5,063,080	6,886,279	1,557,383	3,048,680	2,488,209
New Hampshire	138,116	0	29,840	0	110	7,170
Rhode Island	2,603,214	1,678,828	1,751,569	0	0	634,813
Vermont	192,532	238,760	534,281	39,120	439,660	63,574
Middle Atlantic	**213,899,172**	**206,769,396**	**108,553,105**	**2,430,755**	**11,596,842**	**15,789,558**
New Jersey	80,125,492	79,513,600	30,726,893	769,808	7,184,603	10,016,266
New York	130,506,856	124,391,166	75,964,219	1,222,125	4,088,999	5,293,067
Pennsylvania	3,266,824	2,864,630	1,861,993	438,822	323,240	480,225
East North Central	**47,183,968**	**65,882,660**	**98,998,028**	**73,545,566**	**57,390,948**	**104,522,536**
Illinois	13,166,303	19,165,217	31,547,055	22,565,837	14,430,394	30,548,348
Indiana	5,309,283	1,903,797	2,773,690	3,143,088	1,067,354	3,156,731
Michigan	19,230,236	26,368,103	37,859,808	36,383,647	32,151,432	53,510,229
Ohio	2,050,779	4,706,089	5,604,068	3,140,859	3,376,730	5,321,892
Wisconsin	7,427,367	13,739,454	21,213,407	8,312,135	6,365,038	11,985,336
West North Central	**100,327,854**	**143,386,736**	**166,663,546**	**167,966,829**	**189,497,163**	**208,520,176**
Iowa	3,362,160	6,834,493	8,332,510	8,177,435	13,589,853	25,804,395
Kansas	79,117,065	101,021,964	116,827,573	118,094,493	129,053,869	122,945,951
Minnesota	5,553,078	8,076,922	6,965,588	1,536,266	5,204,863	13,442,881
Missouri	7,661,174	15,329,099	20,382,914	27,269,091	25,799,417	25,421,786
Nebraska	4,559,999	11,850,189	14,008,693	12,844,249	15,622,804	19,618,032
North Dakota	19,685	15,449	17,429	20,953	44,797	43,064
South Dakota	54,693	258,620	128,839	24,342	181,560	1,244,067
South Atlantic	**194,224,143**	**191,408,884**	**194,824,272**	**172,124,033**	**149,062,082**	**137,324,735**
Delaware	5,684,296	6,998,867	5,143,254	1,484,639	1,290,182	2,297,100
District of Columbia	-	-	-	-	-	-
Florida	171,467,893	166,047,143	167,443,573	158,042,212	137,466,481	125,560,387
Georgia	2,785,878	3,666,341	3,022,519	5,880,513	6,091,137	4,663,709
Maryland	5,998,360	5,230,239	9,819,853	518,542	317,093	231,286
North Carolina	901,785	1,702,032	591,488	4,417	902	5,566
South Carolina	5,008,409	5,417,462	5,176,854	5,184,310	2,503,627	3,793,153
Virginia	2,180,010	2,285,046	3,557,393	995,449	1,362,013	483,827
West Virginia	197,512	61,754	69,338	13,951	30,647	289,707
East South Central	**79,244,447**	**99,461,213**	**72,050,850**	**51,468,242**	**43,533,083**	**37,054,246**
Alabama	1,780,026	1,381,779	6,934,156	7,014,696	3,732,011	3,934,836
Kentucky	2,588,743	1,901,706	934,056	1,207,780	721,370	135,028
Mississippi	74,559,344	95,073,120	64,182,638	43,245,766	39,079,702	32,808,763
Tennessee	316,334	1,104,608	0	0	0	175,619
West South Central	**2,134,763,458**	**2,243,820,251**	**2,166,467,540**	**2,214,495,572**	**2,179,474,437**	**2,091,352,490**
Arkansas	54,914,593	58,863,413	30,253,958	6,993,470	6,905,100	15,971,757
Louisiana	415,911,574	424,990,716	401,399,051	369,182,805	349,985,517	365,843,306
Oklahoma	285,702,162	329,939,598	334,446,304	347,633,674	333,765,579	331,003,207
Texas	1,378,235,129	1,430,026,524	1,400,368,227	1,490,685,623	1,488,818,241	1,378,534,220
Mountain	**175,602,992**	**175,032,370**	**196,387,296**	**178,081,312**	**174,585,826**	**165,450,965**
Arizona	57,911,318	49,699,497	51,257,505	54,378,909	29,492,830	24,337,588
Colorado	13,592,896	31,928,441	35,409,017	29,440,238	34,276,034	42,167,662
Idaho	15,500	45,700	491,100	37,600	676,000	103,500
Montana	2,069,450	4,182,083	2,320,409	909,386	953,273	708,536
Nevada	44,249,474	27,541,408	39,827,538	21,748,782	32,867,968	25,104,890
New Mexico	54,559,762	56,280,079	60,409,682	63,278,764	70,202,545	69,663,487
Utah	3,096,812	5,132,878	6,185,667	7,574,978	5,343,552	2,805,420
Wyoming	107,780	222,284	486,378	712,655	753,624	559,882
Pacific	**656,011,203**	**520,070,555**	**449,080,980**	**302,222,896**	**359,056,957**	**295,010,294**
California	655,333,854	518,807,931	444,600,585	302,167,277	359,050,679	295,008,915
Oregon	186,127	321,384	2,380,127	0	6,278	1,379
Washington	491,222	941,240	2,100,268	55,619	0	0
Pacific Noncontiguous	**29,070,862**	**28,762,582**	**28,294,944**	**24,431,436**	**23,533,975**	**22,203,829**
Alaska	29,070,862	28,762,582	28,294,944	24,431,436	23,533,975	22,203,829
Hawaii	-	-	-	-	-	-
Total U.S.	**3,640,153,669**	**3,681,595,315**	**3,490,522,530**	**3,188,363,144**	**3,191,199,763**	**3,080,868,279**

Note Totals may not equal sum of components because of independent rounding
Source Federal Power Commission Form 4

7. Fuel Receipts

Receipts of
Electric Utilities



Source: Federal Power Commission Form 423

The amount of fossil fuels received by electric utilities in the contiguous United States during 1981 declined from 1980. The amount of coal received by utilities declined from 593,995 thousand short tons in 1980 to 579,374 thousand short tons in 1981, a decrease of 2.5 percent. Coal receipts declined mainly as a result of the coal miners' strike that occurred in the first half of 1981. Generally, utilities prepared themselves for the expected strike by ordering and receiving supplemental supplies of coal in 1980.

Since 1978, utilities have been reducing their receipts of oil in response to increasing oil prices. In 1981, utilities reduced their receipts of oil to 334,769 thousand barrels, a decrease of 18.1 percent from receipts of 408,607 thousand barrels in 1980. Compared to 1976, utilities have reduced their receipts of oil by 38.1 percent. In 1981, utility receipts of heavy oil declined 17.4 percent from 1980, while light oil receipts declined 28.6 percent from 1980.

Receipts of natural gas by utilities in 1981 declined by a small margin, only 0.4 percent, from 1980. This annual decline is the first time gas receipts have declined since 1976, when they dropped 2.3 percent from the previous year. In 1981, receipts of gas by utilities were 3,552,659 million cubic feet (MMcf), down slightly from 1980 when receipts were 3,568,694 MMcf.

Table 68 below shows the changes in fossil fuel receipts by electric utilities between 1976 and 1981. The graphs to the left on this page illustrate receipts of coal, oil, and gas in 1981, 1980, and 1976.

Table 68. Fossil Fuel Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, in the Contiguous United States, 1976-1981

Year	Receipts of Coal[1]	Percent Change from Previous Year	Receipts of Oil[2]	Percent Change from Previous Year	Receipts of Gas[3]	Percent Change from Previous Year
1981 ...	579,374	-2.5	334,769	-18.1	3,552,659	-0.4
1980 ...	593,995	6.7	408,607	-19.2	3,568,694	6.4
1979 ...	556,558	16.9	505,590	-16.6	3,354,824	7.4
1978 ...	476,168	-2.9	605,928	-3.2	3,123,919	0.8
1977 ...	490,415	7.8	625,692	15.8	3,098,292	4.6
1976 ...	454,858	-	540,513	-	2,962,811	-

[1] In thousand short tons.
[2] In thousand barrels.
[3] In million cubic feet.
Source: Federal Power Commission Form 423.

Fuel Receipts (continued)

Coal Receipts By NERC Region

In the contiguous United States, the NERC region receiving the greatest amount of coal during 1981 was ECAR (153,200 thousand short tons), which accounted for 26.4 percent of all receipts. However, coal receipts reported by member utilities in SWPP recorded the largest percent increase from 1980 to 1981, 13.0 percent. ERCOT also showed a significant increase of 9.9 percent for same period.

This is in contrast to four of the NERC regions that received less coal in 1981 than in 1980. The region with the largest decrease in coal receipts between 1980 and 1981 was MAIN (12.0 percent) followed by ECAR (8.6 percent). Overall, coal receipts have increased by 27.4 percent since 1976. Individually, SWPP's receipts have increased the most since 1976 (309.2 percent) while MAIN's coal receipts have decreased 2.8 percent since that time.

Table 69. Receipts of Coal at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region in 1981

(Thousand Short Tons)

North American Electric Reliability Council Region	Coal Receipts in 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	153,200	-8.6	*
ERCOT	44,447	9.9	264.0
MAAC	35,866	-5.0	4.9
MAIN	59,165	-12.0	-2.8
MARCA (U.S.)	51,081	1.1	46.5
NPCC (U.S.)	8,613	6.9	32.7
SERC	113,476	-2.6	13.6
SWPP	41,923	13.0	309.2
WSCC (U.S.)	71,604	4.2	66.6
Total	**579,374**	**-2.5**	**27.4**

* = increase or decrease less than 0.05 percent.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Oil Receipts By NERC Region

All nine NERC regions reduced their receipts of oil in 1981 compared to 1980. Quantitatively, the region that recorded the greatest amount of oil receipts in 1981 was NPCC (132,006 thousand barrels) followed by SERC (85,900 thousand barrels). The region with the lowest amount of oil receipts during 1981 was ERCOT (1,027 thousand barrels). Several of the NERC regions reported significant decreases in oil receipts from 1980 to 1981. SWPP's 48.2 percent annual decrease led among the regions, while NPCC, by far the largest receiver of oil in 1981, showed the lowest annual decrease of only 1.7 percent. Since 1976, the NERC regions have decreased their oil receipts by 38.1 percent. Decreases for the 1976-1981 period range from SWPP's 77.9 percent to MAIN's 4.9 percent.

Table 70. Receipts of Oil at Electric Utilities for Plants with a Capacity of 25 Megawatts or greater, by NERC Region in 1981

(Thousand Barrels)

North American Electric Reliability Council Region	Oil Receipts in 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	8,825	-35.8	-61.0
ERCOT	1,027	-39.3	-51.2
MAAC	34,381	-27.5	-43.3
MAIN	11,435	-21.0	-4.9
MARCA (U.S.)	4,690	-28.7	-63.3
NPCC (U.S.)	132,006	-1.7	-18.7
SERC	85,900	-8.4	-32.3
SWPP	8,495	-48.2	-77.9
WSCC (U.S.)	48,012	-40.2	-53.3
Total	**334,769**	**-18.1**	**-38.1**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Gas Receipts By NERC Region

Electric utilities reduced their receipts of natural gas by only 0.4 percent in 1981 as compared to 1980. The decrease might have been much more pronounced had not the WSCC region increased its natural gas receipts by 21.6 percent in 1981. WSCC's effect on the change in natural gas receipts is possible because it is one of three regions (ERCOT and SWPP being the other two) that collectively accounted for 86.8 percent of all natural gas receipts in 1981. Although two other regions reported significant decreases in natural gas receipts in 1981, specifically MAIN (36.8) and MARCA (38.8), their effect on the overall annual decrease is minimal. Since 1976, there have been some dramatic changes in the receipt of natural gas among NERC regions. During this period, MAAC has increased its natural gas receipts by 1,630.2 percent while NPCC has increased its receipts 1,577.8 percent. At the other end of the scale, MARCA has decreased its natural gas receipts by 65.3 percent since 1976. Overall, receipts of natural gas in the contiguous United States have increased 19.9 percent since 1976.

Table 71. Receipts of Gas at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region in 1981

(Million Cubic Feet)

North American Electric Reliability Council Region	Gas Receipts in 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	23,981	-18.6	-63.0
ERCOT	1,047,324	-4.1	-0.2
MAAC	87,287	-1.6	1,630.2
MAIN	22,087	-36.8	-30.7
MARCA (U.S.)	17,214	-38.8	-65.3
NPCC (U.S.)	133,015	4.4	1,577.8
SERC	184,902	1.1	31.2
SWPP	1,215,225	-7.2	3.5
WSCC (U.S.)	821,623	21.6	87.2
Total	**3,552,659**	**-0.4**	**19.9**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Fuel Receipts (continued)

Coal Receipts By Census Region

Receipts of coal rose significantly in the New England (19.9 percent) and West South Central (15.7 percent) Census Regions between 1980 and 1981. However, these increases were more than offset by decreases in several other regions, particularly the East North Central (10.9 percent) and East South Central (10.3 percent) regions. Since 1976, only two of the Census Regions shown here have decreased their receipts of coal, and then by relatively minor amounts, while the majority of the regions have increased their receipts of coal substantially, particularly the West South Central Region.

Table 72. Receipts of Coal at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region in 1981

(Thousand Short Tons)

Census Region	Coal Receipts in 1981	Percent Change from 1980	Percent Difference from 1976
New England	2,022	19.9	168.5
Middle Atlantic	48,944	-4.3	7.1
East North Central	142,617	-10.9	-3.5
West North Central	75,665	-2.4	43.8
South Atlantic	106,060	1.6	24.2
East South Central	63,069	-10.3	-4.6
West South Central	69,395	15.7	419.0
Mountain	66,036	4.9	67.1
Pacific Contiguous	5,564	-5.2	54.6
Total	**579,374**	**-2.5**	**27.4**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Oil Receipts By Census Region

All of the Census Regions decreased their receipts of oil in 1981 as compared to 1980. From 1980 to 1981, the Mountain Region decreased its receipts of oil 85.4 percent to only 779 thousand barrels. At the same time, the largest receiver of oil was the South Atlantic Region (97,751 thousand barrels), which resulted in a decrease of 11.4 percent.

Since 1976, utilities in the contiguous United States have cut their oil receipts by 38.1 percent. The largest decline in oil receipts during this period was reported by the West North Central Region (90.6 percent), which was closely followed by the Mountain Region (90.1 percent). The New England Region, heavily dependent on oil to produce electricity, reported the lowest (7.7 percent) decrease in oil receipts since 1976.

Fuel Receipts (continued)

Table 73. Receipts of Oil at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region in 1981

(Thousand Barrels)

Census Region	Oil Receipts in 1981	Percent Change from 1980	Percent Difference from 1976
New England	67,514	-10.0	-7.7
Middle Atlantic	91,659	-4.1	-31.1
East North Central	18,772	-29.2	-42.3
West North Central	935	-58.7	-90.6
South Atlantic	97,751	-11.4	-33.9
East South Central	3,344	-44.7	-79.4
West South Central	6,874	-46.5	-72.4
Mountain	779	-85.4	-90.1
Pacific Contiguous	47,141	-37.0	-50.3
Total	**334,769**	**-18.1**	**-38.1**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Gas Receipts By Census Region

There were some differences in the changes in natural gas receipts among Census Regions in 1981. The annual percent changes from 1980 to 1981 ranged from New England's increase of 47.2 percent to East North Central's decrease of 32.9 percent. The West South Central Region, by far the largest receiver of natural gas in 1981, decreased its receipts of natural gas by 4.1 percent. Receipts of natural gas increased the most since 1976 in the Middle Atlantic Region (2,075.6 percent) and decreased the most in the East North Central Region (59.6 percent).

Table 74. Receipts of Gas at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater by Census Region in 1981

(Million Cubic Feet)

Census Region	Gas Receipts in 1981	Percent Change from 1980	Percent Difference from 1976
New England	9,891	47.2	260.7
Middle Atlantic	205,503	1.4	2,075.6
East North Central	38,879	-32.9	-59.6
West North Central	86,553	-31.8	-52.1
South Atlantic	182,754	0.9	42.8
East South Central	77,706	-18.4	113.0
West South Central	2,135,473	-4.1	4.0
Mountain	161,220	1.5	0.6
Pacific Contiguous	654,681	27.8	121.9
Total	**3,552,659**	**-0.4**	**19.9**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 75. Fossil Fuel Receipts at Electric Utilities for Plants with a Capacity of 25 Meagwatts or Greater, in the Contiguous United States, 1976-1981

Type of Fuel	1981	1980	1979	1978	1977	1976
Total Coal (Thousand Short Tons)	579,374	593,995	556,558	476,169	490,415	454,858
Anthracite	812	1,061	1,146	1,019	1,182	1,111
Bituminous	381,519	410,518	406,845	354,019	379,960	364,227
Subbituminous	151,933	139,705	110,682	90,519	85,295	67,309
Lignite	45,109	42,712	37,885	30,611	23,979	22,211
Total Oil (Thousand Barrels)	334,769	408,607	505,590	605,928	625,692	540,513
Heavy Oil	317,228	384,029	469,861	536,441	554,106	486,117
Light Oil	17,542	24,578	35,729	69,487	71,586	54,396
Total Gas (Million Cubic Feet)	3,552,659	3,568,694	3,354,824	3,123,919	3,098,292	2,962,811
Natural Gas	3,535,719	3,552,444	3,333,548	3,107,846	3,082,346	2,944,466
Other	16,940	16,251	21,276	16,073	15,946	18,345

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

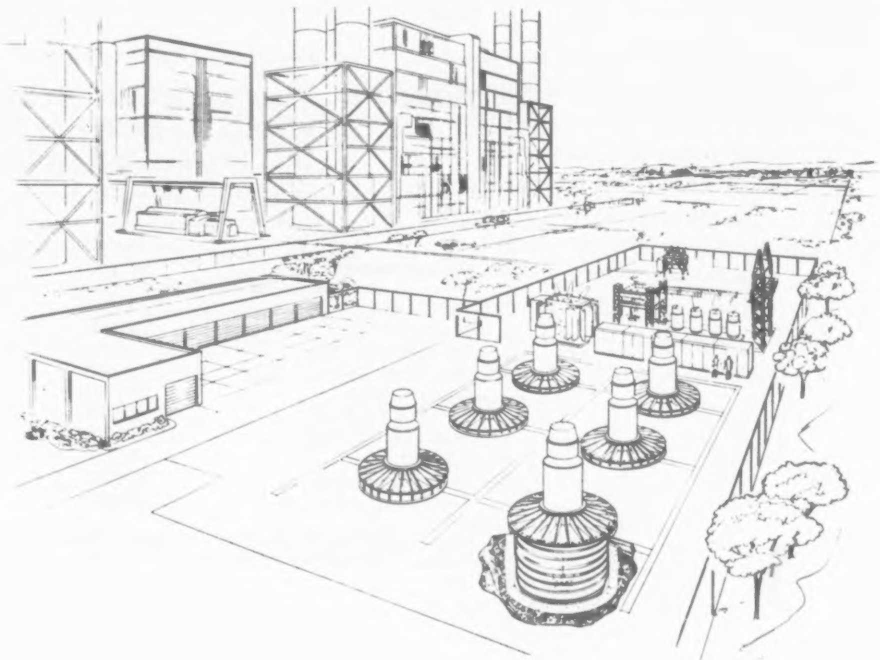
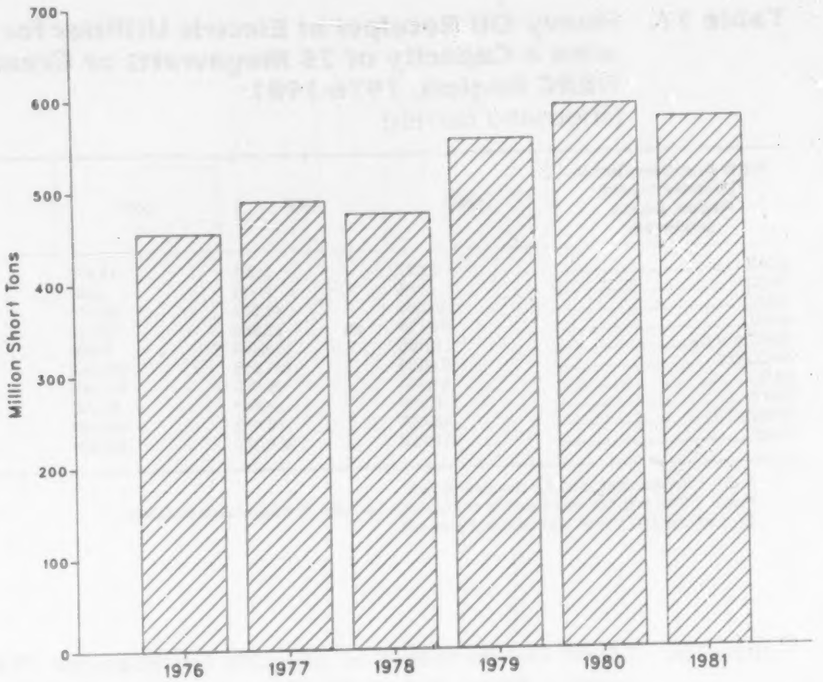


Figure 12. Receipts of Coal at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, 1976-1981



Source: Federal Power Commission Form 423.

Table 76. Coal Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

(Thousand Short Tons)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	153,200	167,603	168,766	148,067	162,200	153,137
ERCOT	44,447	40,445	31,316	21,013	16,442	12,212
MAAC	35,866	37,755	36,451	30,197	34,235	34,198
MAIN	59,165	67,267	67,198	60,283	58,397	60,874
MARCA(U.S.)	51,081	50,549	47,579	40,431	36,888	34,861
NPCC(U.S.)	8,613	8,054	7,299	6,715	7,442	6,491
SERC	113,476	116,497	112,672	99,601	106,499	99,857
SWPP	41,923	37,095	24,755	19,727	15,950	10,246
WSCC(U.S.)	71,604	68,731	60,521	50,134	52,361	42,980
Total	579,374	593,995	556,558	476,169	490,415	454,858

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 77. Heavy Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

(Thousand Barrels)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	5,937	9,968	15,575	21,974	16,663	13,514
ERCOT	765	1,174	1,989	3,278	1,668	1,457
MAAC	30,263	41,866	52,356	69,760	62,281	53,549
MAIN	10,635	13,266	12,540	12,250	9,102	5,443
MARCA(U.S.)	4,188	5,499	8,998	13,027	10,492	11,172
NPCC(U.S.)	131,190	133,516	137,049	158,432	157,096	157,664
SERC	81,340	88,085	101,288	112,598	106,315	109,624
SWPP	6,460	14,183	33,493	53,808	52,312	34,097
WSCC(U.S.)	46,450	76,472	106,573	91,314	138,176	99,598
Total	317,228	384,029	469,861	536,441	554,106	486,117

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 78. Light Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

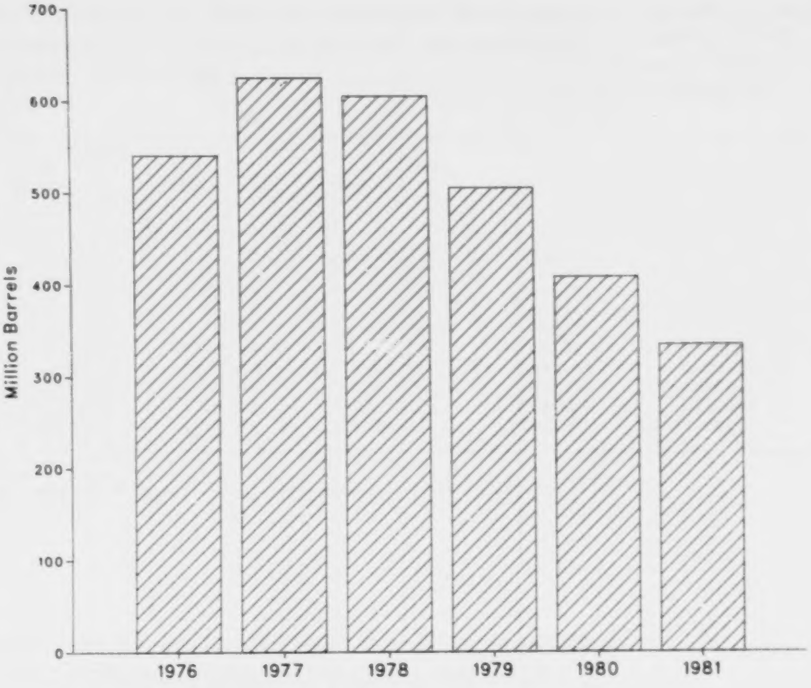
(Thousand Barrels)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	2,887	3,773	5,719	13,641	11,489	9,068
ERCOT	262	518	533	489	714	648
MAAC	4,118	5,540	5,059	8,938	10,128	7,059
MAIN	800	1,215	4,177	8,534	7,771	6,579
MARCA(U.S.)	502	1,081	2,671	2,198	2,563	1,603
NPCC(U.S.)	816	726	1,558	2,188	3,444	4,677
SERC	4,559	5,644	6,893	20,286	21,583	17,353
SWPP	2,036	2,212	2,895	8,183	7,046	4,257
WSCC(U.S.)	1,562	3,889	6,225	5,031	6,848	3,132
Total	17,542	24,578	35,729	69,487	71,586	54,396

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Fuel Receipts (continued)

Figure 13. Receipts of Oil at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, 1976-1981



Source: Federal Power Commission Form 423.

Table 79. Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

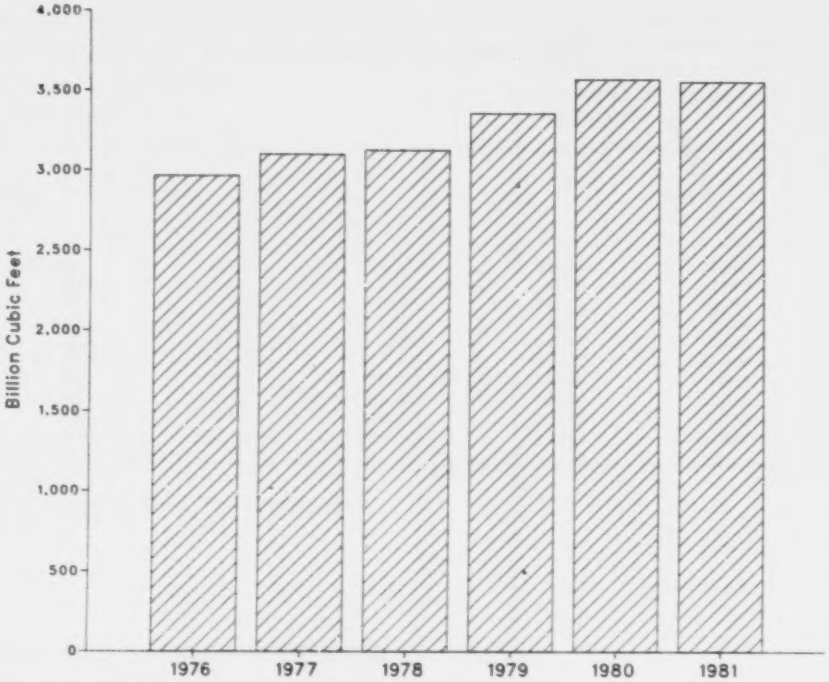
(Thousand Barrels)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	8,825	13,741	21,294	35,614	28,153	22,602
ERCOT	1,027	1,693	2,522	3,766	2,382	2,105
MAAC	34,381	47,407	57,414	78,697	72,409	60,608
MAIN	11,435	14,460	16,717	20,784	16,872	12,022
MARCA(U.S.)	4,690	6,580	11,669	15,225	13,055	12,775
NPCC(U.S.)	132,006	134,242	138,607	160,620	160,540	162,341
SERC	85,900	93,728	108,181	132,885	127,898	126,977
SWPP	8,495	16,395	36,388	61,991	59,359	38,354
WSCC(U.S.)	48,012	80,341	112,799	96,345	145,024	102,730
Total	334,769	408,607	505,590	605,928	625,692	540,513

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Fuel Receipts (continued)

Figure 14. Receipts of Gas at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, 1976-1981



Source: Federal Power Commission Form 423.

Table 80. Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

(Million Cubic Feet)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	23,961	29,470	39,440	39,706	35,447	64,862
ERCOT	1,047,324	1,091,812	1,065,380	1,199,047	1,163,071	1,049,464
MAAC	87,267	88,743	35,347	1,346	7,480	5,045
MAIN	22,067	34,926	47,459	28,558	15,552	31,859
MARCA(U.S.)	17,214	28,106	34,128	18,318	28,058	49,660
NPCC(U.S.)	133,015	127,402	81,657	3,165	7,515	7,926
SERC	184,902	182,953	186,779	172,506	155,119	140,961
SWPP	1,215,225	1,309,836	1,235,491	1,200,051	1,175,241	1,174,056
WSCC(U.S.)	821,623	675,446	629,143	461,220	510,809	438,972
Total	3,552,659	3,568,694	3,354,824	3,123,919	3,098,292	2,962,811

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Fuel Receipts (continued)

Table 81. Fossil Fuel Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

(Billion Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	3,603,866	3,977,597	3,998,957	3,563,223	3,837,262	3,644,970
ERCOT	1,742,084	1,731,914	1,567,925	1,556,990	1,440,284	1,248,684
MAAC	1,175,354	1,306,178	1,277,752	1,214,751	1,275,007	1,200,516
MAIN	1,325,307	1,535,074	1,558,466	1,416,347	1,350,951	1,386,157
MARCA(U.S.)	915,552	949,674	943,236	822,502	769,125	749,614
NPCC(U.S.)	1,174,518	1,169,104	1,125,980	1,159,327	1,178,803	1,165,892
SERC	3,442,909	3,559,184	3,530,074	3,325,018	3,407,085	3,241,310
SWPP	2,054,762	2,121,589	1,961,023	1,988,640	1,880,266	1,654,282
WSCC(U.S.)	2,535,286	2,520,938	2,521,382	2,036,881	2,433,250	1,914,010
Total	17,969,659	18,871,254	18,484,794	17,083,679	17,572,033	16,207,535

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 82. Coal Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

(Billion Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	3,531,861	3,870,949	3,841,240	3,317,485	3,643,603	3,459,828
ERCOT	651,402	582,894	440,138	288,819	224,273	159,840
MAAC	873,537	923,208	889,114	733,241	827,226	827,107
MAIN	1,231,507	1,409,791	1,408,240	1,261,947	1,233,237	1,283,375
MARCA(U.S.)	869,382	881,341	837,640	711,495	661,885	622,432
NPCC(U.S.)	214,444	202,046	181,338	163,031	182,828	160,814
SERC	2,717,387	2,785,757	2,663,191	2,327,675	2,460,736	2,315,495
SWPP	752,113	671,398	461,278	386,339	305,910	210,136
WSCC(U.S.)	1,375,210	1,321,512	1,171,019	960,939	1,009,616	823,413
Total	12,216,843	12,648,896	11,893,199	10,130,969	10,549,312	9,862,439

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independant rounding.
Source: Federal Power Commission Form 423.

Table 83. Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

(Billion Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	53,060	82,958	129,129	213,994	168,423	134,307
ERCOT	6,221	10,195	15,368	23,159	14,261	12,791
MAAC	211,436	291,158	351,911	480,100	440,063	368,185
MAIN	71,310	89,803	102,018	125,290	101,778	72,164
MARCA(U.S.)	29,100	40,658	71,291	92,861	79,510	78,175
NPCC(U.S.)	823,050	835,302	860,707	993,100	988,351	997,017
SERC	537,574	586,905	674,764	819,640	787,048	782,004
SWPP	53,092	102,534	226,818	383,542	367,675	239,357
WSCC(U.S.)	294,853	491,927	690,349	590,111	886,780	629,063
Total	2,079,696	2,531,440	3,122,356	3,721,798	3,833,889	3,313,062

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 84. Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by NERC Region, 1976-1981

(Billion Btu)

North American Electric Reliability Council Region, Alaska, and Hawaii	1981	1980	1979	1978	1977	1976
ECAR	18,966	23,690	28,588	31,745	25,237	50,835
ERCOT	1,084,461	1,138,825	1,112,419	1,245,012	1,201,750	1,076,054
MAAC	90,381	91,812	36,727	1,410	7,718	5,224
MAIN	22,491	35,480	48,208	29,110	15,936	32,619
MARCA(U.S.)	17,070	27,676	34,305	18,145	27,730	49,207
NPCC(U.S.)	137,024	131,755	83,935	3,196	7,624	8,061
SERC	187,948	186,522	192,118	177,703	159,302	143,811
SWPP	1,249,557	1,347,657	1,272,927	1,238,759	1,206,681	1,204,789
WSCC(U.S.)	865,223	707,499	660,014	485,831	536,854	461,535
Total	3,673,120	3,690,918	3,469,240	3,230,912	3,188,832	3,032,134

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 85. Coal Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Thousand Short Tons)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**2,022**	**1,686**	**1,065**	**760**	**980**	**753**
Connecticut	-	-	-	-	-	-
Maine	-	-	-	-	-	-
Massachusetts	1,143	633	2	-	-	-
New Hampshire	858	1,052	1,050	760	960	753
Rhode Island	-	-	-	-	-	-
Vermont	21	-	13	-	20	-
Middle Atlantic	**48,944**	**51,167**	**49,547**	**41,605**	**47,137**	**45,683**
New Jersey	2,706	2,526	2,282	2,005	2,697	2,533
New York	6,590	6,368	6,233	5,956	6,462	5,738
Pennsylvania	39,648	42,273	41,032	33,644	37,978	37,412
East North Central	**142,617**	**160,130**	**164,382**	**142,064**	**150,069**	**147,840**
Illinois	31,708	35,888	36,550	33,030	31,844	34,791
Indiana	29,363	36,817	36,922	30,535	33,133	30,479
Michigan	22,941	22,145	24,264	20,147	21,319	21,308
Ohio	45,449	50,766	53,377	46,534	53,055	50,113
Wisconsin	13,135	14,514	13,269	11,818	10,718	11,149
West North Central	**75,665**	**77,496**	**73,155**	**63,318**	**58,395**	**52,617**
Iowa	10,357	10,707	11,846	8,770	7,675	6,707
Kansas	11,066	10,242	9,039	8,094	6,160	3,432
Minnesota	11,806	12,233	12,962	11,542	11,917	10,505
Missouri	21,819	24,812	22,782	20,619	21,354	20,556
Nebraska	4,901	4,610	4,187	2,728	2,315	1,852
North Dakota	13,084	12,215	9,602	8,474	6,508	6,885
South Dakota	2,632	2,677	2,737	3,091	2,466	2,679
South Atlantic	**106,060**	**104,388**	**94,265**	**85,565**	**94,145**	**85,388**
Delaware	1,528	1,083	1,011	763	704	765
District of Columbia	-	-	-	-	-	-
Florida	10,053	8,684	7,950	7,309	7,015	6,940
Georgia	21,334	21,307	19,212	17,018	18,093	14,603
Maryland	4,914	6,002	5,442	4,474	5,156	4,569
North Carolina	24,739	23,434	21,033	19,285	21,856	19,587
South Carolina	8,560	8,096	6,375	6,663	7,296	5,495
Virginia	6,323	5,202	5,405	4,046	5,517	5,309
West Virginia	28,610	30,580	27,837	26,006	28,508	28,120
East South Central	**63,069**	**70,330**	**72,451**	**64,712**	**66,213**	**66,097**
Alabama	18,342	19,838	18,572	17,643	18,262	18,094
Kentucky	24,899	24,896	25,631	24,143	25,822	25,394
Mississippi	2,991	3,751	2,753	1,703	1,702	1,577
Tennessee	16,838	21,843	25,495	21,223	20,428	21,032
West South Central	**69,395**	**59,999**	**41,127**	**27,941**	**21,012**	**13,370**
Arkansas	5,861	3,275	1,557	1,471	-	-
Louisiana	3,200	2,068	-	-	-	-
Oklahoma	9,266	7,883	4,367	2,065	1,920	599
Texas	51,068	46,773	35,202	24,405	19,093	12,771
Mountain	**66,036**	**62,930**	**55,765**	**45,403**	**47,912**	**39,511**
Arizona	13,397	12,471	12,179	7,760	8,155	6,763
Colorado	10,641	11,206	9,385	8,553	8,315	7,089
Idaho	-	-	-	-	-	-
Montana	3,339	3,364	3,511	3,331	3,223	2,316
Nevada	5,113	4,515	4,342	3,695	5,396	4,994
New Mexico	11,170	11,622	8,676	8,289	9,122	8,020
Utah	4,826	5,198	4,246	2,754	2,419	1,869
Wyoming	17,551	14,554	13,425	11,022	11,281	8,459
Pacific	**5,564**	**5,870**	**4,801**	**4,800**	**4,550**	**3,600**
California	-	-	-	-	-	-
Oregon	1,164	1,070	1	-	-	-
Washington	4,400	4,800	4,800	4,800	4,550	3,600
Total	**579,374**	**593,995**	**556,558**	**476,168**	**490,415**	**454,858**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 86. Heavy Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Thousand Barrels)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**67,228**	**74,634**	**73,506**	**75,731**	**71,456**	**72,804**
Connecticut	18,231	21,330	18,221	19,875	16,896	19,138
Maine	3,785	3,445	2,515	1,772	1,265	1,823
Massachusetts	40,174	44,608	47,008	49,405	47,289	47,923
New Hampshire	3,823	3,670	4,642	3,513	2,710	2,924
Rhode Island	1,214	1,381	1,120	1,166	1,296	996
Vermont	-	-	-	-	-	-
Middle Atlantic	**87,385**	**90,193**	**101,776**	**135,135**	**130,907**	**121,704**
New Jersey	9,632	12,578	18,336	26,637	25,515	22,411
New York	63,962	58,882	63,543	82,701	85,640	84,859
Pennsylvania	13,791	18,733	19,896	25,797	19,752	14,434
East North Central	**16,195**	**22,612**	**27,153**	**31,807**	**24,493**	**18,388**
Illinois	10,319	12,868	12,107	11,765	8,583	4,935
Indiana	-	-	-	-	-	-
Michigan	5,623	9,018	13,476	18,042	14,096	13,099
Ohio	247	641	1,503	1,925	1,704	255
Wisconsin	6	65	68	75	110	98
West North Central	**367**	**943**	**3,994**	**6,631**	**6,351**	**6,909**
Iowa	-	-	-	-	-	-
Kansas	-	43	2,083	3,537	3,594	3,987
Minnesota	51	343	783	1,171	1,194	773
Missouri	316	380	621	816	781	577
Nebraska	-	155	470	1,037	704	1,433
North Dakota	-	-	-	-	-	-
South Dakota	-	21	37	70	79	140
South Atlantic	**92,374**	**103,816**	**123,155**	**139,125**	**129,445**	**134,076**
Delaware	4,969	5,774	6,732	7,570	6,913	6,712
District of Columbia	783	1,464	2,194	3,585	3,724	2,533
Florida	73,960	71,053	72,076	73,974	67,177	75,628
Georgia	270	732	2,139	4,320	4,643	4,558
Maryland	5,287	8,541	13,431	18,795	15,645	16,347
North Carolina	-	-	-	593	-	-
South Carolina	1,344	2,043	3,697	5,244	5,063	4,469
Virginia	5,762	14,209	22,886	24,991	26,279	23,828
West Virginia	-	-	-	54	-	-
East South Central	**2,637**	**5,060**	**10,165**	**18,238**	**16,438**	**10,647**
Alabama	-	-	-	4	-	-
Kentucky	-	-	-	-	-	-
Mississippi	2,637	5,060	10,165	18,234	16,438	10,647
Tennessee	-	-	-	-	-	-
West South Central	**4,662**	**10,493**	**23,593**	**38,554**	**36,839**	**22,007**
Arkansas	800	3,125	7,375	12,627	13,136	8,218
Louisiana	3,001	6,001	13,604	21,926	20,573	11,207
Oklahoma	26	-	38	-	7	132
Texas	835	1,367	2,576	4,001	3,123	2,450
Mountain	**342**	**4,517**	**7,387**	**6,336**	**9,578**	**5,638**
Arizona	24	1,582	4,475	2,828	6,425	3,675
Colorado	32	198	416	358	565	580
Idaho	-	-	-	-	-	-
Montana	-	-	-	-	121	-
Nevada	194	2,507	1,539	2,693	1,382	528
New Mexico	72	171	793	383	846	824
Utah	19	59	163	73	218	31
Wyoming	-	-	-	-	-	-
Pacific	**46,038**	**71,761**	**99,132**	**84,883**	**128,598**	**93,945**
California	46,038	71,519	98,686	84,883	128,598	93,945
Oregon	-	-	-	-	-	-
Washington	-	243	446	-	-	-
Total	**317,228**	**384,029**	**469,861**	**536,440**	**554,106**	**486,117**

* = Number less than 0.5 rounded to zero.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 87. Light Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Thousand Barrels)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**286**	**359**	**529**	**578**	**480**	**365**
Connecticut	51	76	206	74	98	76
Maine	27	22	17	40	5	8
Massachusetts	140	209	254	435	290	207
New Hampshire	47	25	22	29	41	45
Rhode Island	-	-	-	-	-	-
Vermont	21	26	30	-	47	29
Middle Atlantic	**4,274**	**5,341**	**5,547**	**10,122**	**13,012**	**11,291**
New Jersey	1,526	2,577	2,221	2,863	4,695	3,119
New York	530	367	1,029	1,610	2,964	4,312
Pennsylvania	2,219	2,397	2,297	5,649	5,353	3,860
East North Central	**2,576**	**3,920**	**8,160**	**19,144**	**17,038**	**14,169**
Illinois	415	652	2,628	6,058	5,611	5,358
Indiana	726	804	1,408	4,000	2,342	1,515
Michigan	580	512	1,171	2,043	2,508	2,120
Ohio	562	1,472	1,885	4,728	4,422	3,994
Wisconsin	294	481	1,068	2,315	2,154	1,182
West North Central	**569**	**1,322**	**3,824**	**4,655**	**4,672**	**3,070**
Iowa	97	127	1,672	672	752	325
Kansas	64	75	371	1,027	1,233	1,133
Minnesota	2	470	236	484	676	365
Missouri	188	415	1,133	2,055	1,646	939
Nebraska	92	94	288	340	236	258
North Dakota	85	57	59	44	48	29
South Dakota	41	85	66	52	81	21
South Atlantic	**5,376**	**6,474**	**7,693**	**15,316**	**16,732**	**13,852**
Delaware	117	185	155	688	392	162
District of Columbia	66	109	74	280	155	96
Florida	2,099	3,053	3,350	4,749	4,706	5,333
Georgia	579	312	553	2,338	4,264	4,752
Maryland	596	951	1,012	1,277	1,052	836
North Carolina	397	382	454	2,145	1,401	466
South Carolina	392	362	304	1,071	1,865	194
Virginia	547	755	1,249	1,984	2,264	1,574
West Virginia	582	364	541	784	635	438
East South Central	**707**	**985**	**1,192**	**8,754**	**7,580**	**5,623**
Alabama	231	378	438	1,576	1,414	1,034
Kentucky	156	152	149	247	276	263
Mississippi	78	60	211	1,441	1,555	1,864
Tennessee	242	394	393	5,491	4,335	2,463
West South Central	**2,213**	**2,348**	**2,583**	**5,927**	**5,279**	**2,941**
Arkansas	194	316	236	1,122	897	388
Louisiana	1,596	1,448	1,634	3,161	2,998	1,605
Oklahoma	138	18	113	364	134	36
Texas	285	565	600	1,280	1,251	911
Mountain	**438**	**806**	**1,707**	**1,847**	**2,789**	**2,239**
Arizona	169	393	1,092	1,199	2,387	1,537
Colorado	76	164	279	334	186	267
Idaho	-	-		3	3	-
Montana		11	25		-	
Nevada	39	53	81	35	52	51
New Mexico	98	90	118	68	83	44
Utah	51	81	101	79	77	44
Wyoming	4	14	11	130	1	295
Pacific	**1,103**	**3,023**	**4,495**	**3,145**	**4,003**	**846**
California	999	2,657	3,148	2,791	3,261	744
Oregon	36	366	1,320	342	741	102
Washington	67		27	12	1	
Total	**17,542**	**24,578**	**35,729**	**69,487**	**71,586**	**54,396**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 88. Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Thousand Barrels)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**67,514**	**74,993**	**74,035**	**76,309**	**71,937**	**73,169**
Connecticut	18,282	21,406	18,427	19,949	18,994	19,214
Maine	3,812	3,467	2,532	1,812	1,270	1,831
Massachusetts	40,314	45,017	47,262	49,841	47,579	48,130
New Hampshire	3,871	3,695	4,664	3,542	2,750	2,969
Rhode Island	1,214	1,381	1,120	1,166	1,296	996
Vermont	21	26	30	-	47	29
Middle Atlantic	**91,659**	**95,534**	**107,322**	**145,256**	**143,919**	**132,996**
New Jersey	11,157	15,155	20,557	29,500	30,210	25,530
New York	64,492	59,249	64,572	84,311	88,604	89,172
Pennsylvania	16,010	21,130	22,193	31,445	25,106	18,294
East North Central	**18,772**	**26,531**	**35,313**	**50,951**	**41,531**	**32,557**
Illinois	10,734	13,540	14,735	17,823	14,194	10,293
Indiana	726	804	1,408	4,000	2,342	1,515
Michigan	6,203	9,529	14,647	20,085	16,604	15,219
Ohio	809	2,112	3,388	6,653	6,126	4,249
Wisconsin	300	546	1,136	2,389	2,265	1,281
West North Central	**935**	**2,265**	**7,818**	**11,286**	**11,023**	**9,979**
Iowa	97	127	1,672	672	752	325
Kansas	64	118	2,454	4,564	4,827	5,119
Minnesota	52	813	1,018	1,635	1,870	1,138
Missouri	504	795	1,753	2,871	2,427	1,516
Nebraska	92	249	758	1,377	939	1,691
North Dakota	85	57	59	44	48	29
South Dakota	41	106	103	122	160	161
South Atlantic	**97,751**	**110,290**	**130,848**	**154,441**	**146,177**	**147,927**
Delaware	5,066	5,959	6,886	8,258	7,305	6,874
District of Columbia	849	1,573	2,268	3,865	3,879	2,629
Florida	76,059	74,106	75,425	78,723	71,882	80,961
Georgia	849	1,044	2,692	6,657	8,907	9,311
Maryland	5,883	9,493	14,443	20,072	16,697	17,183
North Carolina	397	382	454	2,738	1,401	466
South Carolina	1,736	2,405	4,001	6,316	6,929	4,664
Virginia	6,309	14,964	24,137	26,975	28,543	25,402
West Virginia	582	364	541	838	635	438
East South Central	**3,344**	**6,045**	**11,357**	**26,993**	**24,018**	**16,270**
Alabama	231	378	438	1,580	1,414	1,034
Kentucky	156	152	149	247	276	263
Mississippi	2,715	5,120	10,376	19,675	17,983	12,511
Tennessee	242	394	393	5,491	4,335	2,463
West South Central	**6,874**	**12,841**	**26,176**	**44,481**	**42,119**	**24,947**
Arkansas	993	3,441	7,611	13,748	14,033	8,606
Louisiana	4,597	7,449	15,238	25,087	23,571	12,812
Oklahoma	164	18	151	364	141	168
Texas	1,120	1,933	3,175	5,282	4,375	3,361
Mountain	**779**	**5,323**	**9,093**	**8,182**	**12,367**	**7,876**
Arizona	194	1,974	5,566	4,028	8,812	5,212
Colorado	108	362	695	692	771	847
Idaho	-	-		3	3	-
Montana		11	25		121	
Nevada	233	2,560	1,620	2,728	1,434	579
New Mexico	170	261	911	449	930	868
Utah	70	140	264	152	295	75
Wyoming	4	14	11	130	1	295
Pacific	**47,141**	**74,785**	**103,627**	**88,028**	**132,601**	**94,792**
California	47,037	74,176	101,834	87,674	131,859	94,689
Oregon	36	366	1,320	342	741	102
Washington	67	243	472	12	1	
Total	**334,769**	**408,607**	**505,590**	**605,928**	**625,692**	**540,513**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 89. Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Million Cubic Feet)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**9,891**	**6,719**	**8,538**	**2,090**	**3,582**	**2,742**
Connecticut	-	-	-	-	-	-
Maine	-	-	-	-	-	-
Massachusetts	6,949	6,480	6,639	2,054	3,143	2,675
New Hampshire	148	-	28	-	-	4
Rhode Island	2,602	-	1,337	-	-	-
Vermont	193	239	534	36	440	64
Middle Atlantic	**205,503**	**202,711**	**104,161**	**1,923**	**10,962**	**9,446**
New Jersey	79,766	80,312	30,497	726	7,019	4,231
New York	123,124	120,683	73,119	1,075	3,932	5,185
Pennsylvania	2,613	1,716	545	123	11	29
East North Central	**38,879**	**57,975**	**81,813**	**62,523**	**50,300**	**96,135**
Illinois	12,316	18,575	26,755	18,082	11,103	22,456
Indiana	4,903	1,458	2,424	2,824	744	2,723
Michigan	14,698	22,224	32,535	31,889	31,036	56,769
Ohio	1,528	3,649	2,724	2,406	2,854	4,369
Wisconsin	5,434	12,070	17,377	7,321	4,564	9,818
West North Central	**86,553**	**126,901**	**148,830**	**150,720**	**168,606**	**180,646**
Iowa	2,685	5,397	8,019	7,506	12,730	23,687
Kansas	68,574	89,425	104,464	107,078	117,755	107,539
Minnesota	4,662	6,580	5,157	364	3,195	9,830
Missouri	6,709	14,474	19,674	25,766	23,123	24,208
Nebraska	3,800	10,457	11,345	9,998	11,763	14,806
North Dakota	-	-	-	-	-	-
South Dakota	123	568	172	8	40	575
South Atlantic	**182,754**	**181,205**	**182,215**	**155,384**	**139,521**	**128,018**
Delaware	4,726	6,385	4,126	586	447	758
District of Columbia	-	-	-	-	-	-
Florida	161,059	156,719	159,881	147,782	131,388	121,805
Georgia	2,731	3,640	2,192	4,703	6,343	4,506
Maryland	5,999	5,226	9,086	277	61	65
North Carolina	761	1,469	5			1
South Carolina	5,126	5,414	3,347	1,061	-	197
Virginia	2,134	2,223	3,493	961	1,266	451
West Virginia	218	132	86	14	16	235
East South Central	**77,706**	**95,220**	**68,521**	**51,312**	**42,612**	**36,474**
Alabama	1,745	1,381	7,283	6,948	3,759	3,854
Kentucky	2,581	1,893	974	2,218	724	772
Mississippi	73,380	91,945	60,264	42,147	38,128	31,849
Tennessee	-	-	-	-	-	-
West South Central	**2,135,473**	**2,226,668**	**2,122,458**	**2,230,655**	**2,156,183**	**2,054,142**
Arkansas	55,998	59,830	30,128	6,976	6,752	15,376
Louisiana	413,735	418,709	389,072	368,307	342,114	343,863
Oklahoma	283,994	324,888	331,242	348,694	332,828	330,329
Texas	1,381,746	1,423,241	1,372,016	1,506,678	1,474,489	1,364,573
Mountain	**161,220**	**158,873**	**187,250**	**169,176**	**166,493**	**160,226**
Arizona	58,082	48,984	50,357	54,743	29,271	24,513
Colorado	12,884	31,691	32,786	28,509	33,221	41,036
Idaho	16	48	455	42	676	110
Montana	2,052	4,082	1,750	665	735	404
Nevada	44,549	27,120	40,576	21,697	31,346	24,905
New Mexico	41,221	42,846	55,737	60,537	66,523	66,899
Utah	2,315	4,045	5,511	2,906	4,649	2,343
Wyoming	101	58	77	74	73	16
Pacific	**654,681**	**512,423**	**451,037**	**300,136**	**360,032**	**294,982**
California	654,046	509,567	447,510	299,000	359,084	294,192
Oregon	188	2,704	3,343	1,136	948	790
Washington	447	151	185	-	-	-
Total	**3,552,659**	**3,568,694**	**3,354,824**	**3,123,919**	**3,098,292**	**2,962,810**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 90. Fossil Fuel Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Billion Btu)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**485,066**	**519,493**	**498,002**	**494,920**	**473,106**	**472,894**
Connecticut	113,407	131,962	113,722	122,842	116,560	117,715
Maine	23,819	21,643	15,806	11,253	7,920	11,408
Massachusetts	289,178	305,523	301,731	311,846	296,561	298,730
New Hampshire	47,525	51,294	57,347	41,774	42,817	38,682
Rhode Island	10,291	8,683	8,354	7,169	8,028	6,130
Vermont	847	387	1,042	36	1,220	230
Middle Atlantic	**1,966,688**	**2,043,808**	**1,969,338**	**1,895,119**	**2,026,262**	**1,925,366**
New Jersey	221,764	241,353	216,634	232,923	259,999	224,390
New York	689,452	649,610	627,978	664,406	705,697	692,998
Pennsylvania	1,055,472	1,152,845	1,124,727	997,789	1,060,566	1,007,978
East North Central	**3,275,944**	**3,742,216**	**3,874,397**	**3,421,084**	**3,541,411**	**3,490,113**
Illinois	739,692	842,185	869,193	805,715	753,177	797,931
Indiana	645,067	802,562	809,902	678,069	725,397	665,931
Michigan	586,041	606,424	684,638	612,430	624,436	639,895
Ohio	1,038,355	1,177,801	1,209,898	1,056,629	1,194,208	1,130,988
Wisconsin	266,789	313,244	300,767	268,241	244,192	255,367
West North Central	**1,443,348**	**1,549,317**	**1,544,709**	**1,388,901**	**1,344,553**	**1,241,088**
Iowa	192,678	205,679	241,563	184,521	170,767	161,669
Kansas	266,876	274,715	284,290	279,729	262,233	207,112
Minnesota	212,092	226,244	240,152	211,998	224,124	203,645
Missouri	471,881	547,616	518,942	485,308	501,977	478,494
Nebraska	92,404	98,171	95,799	74,400	66,547	63,440
North Dakota	173,819	161,988	128,531	113,691	86,767	91,134
South Dakota	33,598	34,904	35,434	39,254	32,137	35,594
South Atlantic	**3,369,623**	**3,411,358**	**3,275,304**	**3,151,454**	**3,272,470**	**3,078,579**
Delaware	74,902	70,936	72,004	70,251	62,301	61,898
District of Columbia	5,146	9,535	13,765	23,382	23,901	16,249
Florida	879,803	829,810	822,865	811,192	741,616	786,384
Georgia	517,935	517,362	475,402	449,212	488,711	407,224
Maryland	163,003	212,729	232,687	232,742	228,642	217,987
North Carolina	607,781	578,753	515,074	479,992	529,780	474,402
South Carolina	226,553	221,613	186,211	201,244	216,688	162,994
Virginia	198,274	226,188	288,716	268,341	312,718	288,000
West Virginia	696,228	744,431	668,579	615,098	668,113	663,440
East South Central	**1,573,484**	**1,777,512**	**1,809,524**	**1,686,643**	**1,674,574**	**1,620,645**
Alabama	443,463	478,121	451,859	434,004	435,791	429,031
Kentucky	573,641	573,378	579,155	536,126	570,480	558,249
Mississippi	163,893	215,771	190,482	205,508	189,464	147,234
Tennessee	392,487	510,242	588,027	511,005	478,839	486,131
West South Central	**3,327,411**	**3,311,867**	**2,982,934**	**3,000,242**	**2,789,817**	**2,447,546**
Arkansas	162,920	138,652	104,983	117,862	94,747	69,585
Louisiana	511,190	515,589	501,512	543,065	505,504	444,349
Oklahoma	457,007	477,716	424,738	402,795	381,367	355,139
Texas	2,196,294	2,179,910	1,951,700	1,936,501	1,808,199	1,578,473
Mountain	**1,456,948**	**1,423,497**	**1,342,877**	**1,109,863**	**1,184,081**	**979,236**
Arizona	343,561	328,803	346,270	249,924	261,018	200,770
Colorado	227,301	257,302	226,524	204,046	205,474	184,727
Idaho	17	49	477	59	730	116
Montana	59,264	61,537	61,928	57,100	56,364	39,106
Nevada	162,110	144,641	149,019	121,647	161,634	141,262
New Mexico	247,565	251,276	217,667	215,039	237,335	217,147
Utah	113,187	123,747	106,073	67,811	62,614	46,047
Wyoming	303,943	256,141	234,919	194,238	198,912	150,061
Pacific	**1,071,145**	**1,092,183**	**1,187,708**	**935,452**	**1,285,755**	**952,188**
California	979,331	990,371	1,095,656	854,473	1,186,783	892,443
Oregon	19,696	22,352	11,111	3,151	5,257	1,402
Washington	72,119	79,460	80,941	77,828	73,715	58,322
Total	**17,969,658**	**18,871,252**	**18,484,793**	**17,083,677**	**17,572,030**	**16,207,634**

* = Number less than 0.5 rounded to zero.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 91. Coal Receipts at Electric Utilities for Plants with a Capacity or 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Billion Btu)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**53,511**	**45,165**	**28,596**	**19,779**	**26,174**	**20,274**
Connecticut	-	-	-	-	-	-
Maine	-	-	-	-	-	-
Massachusetts	29,855	16,947	54	-	-	-
New Hampshire	23,124	28,219	28,207	19,779	25,662	20,274
Rhode Island	-	-	-	-	-	-
Vermont	533	-	335	-	513	-
Middle Atlantic	**1,188,270**	**1,244,238**	**1,200,618**	**1,002,703**	**1,135,780**	**1,104,056**
New Jersey	70,957	66,133	59,557	52,365	70,060	66,152
New York	160,933	156,881	152,742	143,252	156,653	140,539
Pennsylvania	954,380	1,021,224	988,320	807,086	909,066	897,365
East North Central	**3,126,308**	**3,526,888**	**3,587,706**	**3,059,566**	**3,251,646**	**3,212,993**
Illinois	660,008	739,024	751,514	679,248	655,835	712,961
Indiana	635,941	796,417	799,306	652,209	711,109	654,451
Michigan	538,826	532,018	573,197	465,374	502,320	504,889
Ohio	1,031,973	1,161,549	1,187,103	1,015,719	1,156,043	1,102,733
Wisconsin	259,560	297,880	276,586	247,016	226,340	237,959
West North Central	**1,354,123**	**1,413,136**	**1,353,395**	**1,173,575**	**1,112,294**	**1,002,266**
Iowa	189,408	199,500	223,820	172,959	153,518	135,860
Kansas	200,537	188,135	168,519	147,898	117,301	69,968
Minnesota	207,128	214,778	228,700	201,531	209,537	187,063
Missouri	462,195	528,631	489,204	443,118	464,977	445,831
Nebraska	88,290	86,712	80,319	56,128	49,341	38,568
North Dakota	173,325	161,656	128,183	113,434	86,488	90,964
South Dakota	33,240	33,723	34,650	38,507	31,132	34,011
South Atlantic	**2,572,838**	**2,536,950**	**2,273,345**	**2,038,379**	**2,228,559**	**2,036,380**
Delaware	38,144	26,989	25,001	18,695	17,020	19,076
District of Columbia	-	-	-	-	-	-
Florida	239,515	205,723	188,847	172,344	162,188	161,665
Georgia	510,077	507,202	456,585	404,122	429,001	347,059
Maryland	120,473	148,592	133,718	109,171	125,850	112,127
North Carolina	604,690	575,020	512,437	463,865	521,629	471,680
South Carolina	210,609	201,139	157,679	161,088	174,139	133,845
Virginia	156,742	130,128	133,770	98,939	134,365	130,222
West Virginia	692,589	742,157	665,309	610,155	664,368	660,707
East South Central	**1,473,432**	**1,642,879**	**1,668,656**	**1,468,663**	**1,483,544**	**1,483,066**
Alabama	440,152	474,373	441,177	416,934	423,133	418,620
Kentucky	570,096	570,554	577,292	532,424	568,141	555,947
Mississippi	72,101	90,010	64,452	40,386	38,885	36,714
Tennessee	391,083	507,942	585,735	478,919	453,385	471,786
West South Central	**1,075,723**	**917,798**	**610,080**	**407,157**	**301,023**	**178,894**
Arkansas	99,424	55,706	26,179	24,712	-	-
Louisiana	51,805	33,165	-	-	-	-
Oklahoma	158,608	137,102	76,031	35,270	32,254	9,909
Texas	765,886	691,825	507,870	347,175	268,769	168,385
Mountain	**1,284,065**	**1,226,533**	**1,093,020**	**883,386**	**936,580**	**786,190**
Arizona	281,497	264,920	258,498	167,044	175,801	142,720
Colorado	214,096	224,024	190,170	171,637	167,942	138,898
Idaho	-	-	-	-	-	-
Montana	57,056	57,196	59,881	56,336	54,746	38,622
Nevada	112,808	99,606	95,916	81,509	119,522	111,062
New Mexico	204,166	205,662	154,588	149,290	163,410	143,215
Utah	110,609	119,036	99,178	64,123	56,315	43,359
Wyoming	303,832	256,010	234,789	193,436	198,844	148,313
Pacific	**90,571**	**95,308**	**77,780**	**77,760**	**73,710**	**58,320**
California	-	-	-	-	-	-
Oregon	19,291	17,548	20	-	-	-
Washington	71,280	77,760	77,760	77,760	73,710	58,320
Total	**12,216,842**	**12,648,895**	**11,893,198**	**10,130,968**	**10,549,311**	**9,862,438**

* = Number less than 0.5 rounded to zero.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 92. Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Billion Btu)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**421,603**	**467,609**	**460,797**	**473,051**	**443,349**	**449,875**
Connecticut	113,407	131,962	113,722	122,842	116,560	117,715
Maine	23,819	21,643	15,806	11,253	7,920	11,408
Massachusetts	252,374	282,096	295,029	309,792	293,417	296,053
New Hampshire	24,250	23,076	29,112	21,995	17,156	18,404
Rhode Island	7,631	8,683	6,955	7,169	8,028	6,130
Vermont	122	148	172	-	268	166
Middle Atlantic	**568,053**	**589,719**	**661,162**	**890,440**	**879,217**	**811,609**
New Jersey	68,165	92,155	125,392	179,811	182,727	153,884
New York	401,447	367,693	399,910	520,048	545,001	547,141
Pennsylvania	98,441	129,871	135,860	190,581	151,489	110,584
East North Central	**115,513**	**162 643**	**215,032**	**306,484**	**249,316**	**194,192**
Illinois	67,090	84,136	90,366	107,887	85,926	61,887
Indiana	4,215	4,682	8,166	23,032	13,539	8,748
Michigan	37,618	58,027	89,429	122,361	100,447	91,451
Ohio	4,839	12,588	20,449	39,339	36,178	24,651
Wisconsin	1,751	3,209	6,621	13,865	13,227	7,454
West North Central	**5,598**	**13,651**	**47,411**	**68,854**	**66,999**	**61,237**
Iowa	565	739	9,649	3,899	4,370	1,872
Kansas	370	692	15,274	28,135	29,582	31,575
Minnesota	331	4,929	6,338	10,129	11,482	7,024
Missouri	3,070	4,811	10,528	17,103	14,493	9,088
Nebraska	533	1,526	4,660	8,591	5,828	10,498
North Dakota	494	333	348	257	279	170
South Dakota	235	620	614	740	965	1,011
South Atlantic	**611,265**	**689,859**	**814,891**	**953,773**	**901,423**	**912,326**
Delaware	31,861	37,297	42,700	50,929	44,788	42,005
District of Columbia	5,146	9,535	13,765	23,382	23,901	16,249
Florida	477,152	464,983	470,967	487,592	445,505	501,219
Georgia	5,054	6,393	16,414	40,263	53,202	55,528
Maryland	36,439	58,793	89,193	123,277	102,731	105,799
North Carolina	2,304	2,214	2,633	16,126	8,152	2,720
South Carolina	10,698	14,896	24,932	39,043	42,549	28,946
Virginia	39,190	93,605	151,102	168,232	176,867	157,287
West Virginia	3,422	2,142	3,185	4,929	3,729	2,573
East South Central	**20,868**	**37,612**	**70,911**	**165,374**	**146,938**	**99,980**
Alabama	1,332	2,183	2,522	9,249	8,214	5,969
Kentucky	902	886	866	1,431	1,600	1,515
Mississippi	17,231	32,244	65,231	122,608	111,670	78,149
Tennessee	1,404	2,300	2,293	32,086	25,455	14,346
West South Central	**42,489**	**79,797**	**162,292**	**274,546**	**260,187**	**155,151**
Arkansas	6,218	21,537	47,903	85,825	87,649	54,006
Louisiana	28,517	46,532	94,087	154,237	145,286	79,661
Oklahoma	975	107	886	2,107	821	1,012
Texas	6,779	11,622	19,416	32,377	26,432	20,472
Mountain	**4,634**	**32,733**	**55,912**	**49,862**	**75,745**	**47,818**
Arizona	1,147	12,107	34,556	24,615	54,018	31,781
Colorado	642	2,187	4,173	4,136	4,714	5,134
Idaho	-	-	2	15	16	-
Montana	2	62	149	3	756	2
Nevada	1,407	15,901	9,948	16,761	8,803	3,591
New Mexico	991	1,545	5,431	2,670	5,528	5,117
Utah	420	848	1,587	923	1,905	458
Wyoming	25	82	65	739	6	1,735
Pacific	**289,673**	**457,816**	**633,948**	**539,414**	**810,713**	**580,873**
California	289,087	454,167	623,364	537,384	806,439	580,287
Oregon	208	2,104	7,593	1,962	4,269	584
Washington	378	1,544	2,990	68	5	2
Total	**2,079,695**	**2,531,439**	**3,122,355**	**3,721,797**	**3,833,888**	**3,313,062**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 93. Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region and State, 1976-1981

(Billion Btu)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**9,953**	**6,719**	**8,609**	**2,090**	**3,583**	**2,744**
Connecticut	-	-	-	-	-	-
Maine	-	-	-	-	-	-
Massachusetts	6,949	6,480	6,648	2,054	3,143	2,677
New Hampshire	151	-	28	-	-	4
Rhode Island	2,660	-	1,399	-	-	-
Vermont	193	239	534	36	440	64
Middle Atlantic	**212,365**	**209,851**	**107,558**	**1,977**	**11,265**	**9,701**
New Jersey	82,643	83,065	31,685	747	7,212	4,354
New York	127,072	125,036	75,326	1,107	4,042	5,317
Pennsylvania	2,651	1,750	548	123	11	29
East North Central	**34,123**	**52,685**	**71,660**	**55,034**	**40,449**	**82,928**
Illinois	12,594	19,025	27,313	18,580	11,417	23,083
Indiana	4,911	1,463	2,429	2,827	750	2,732
Michigan	9,597	16,378	22,011	24,696	21,669	43,556
Ohio	1,543	3,664	2,347	1,571	1,987	3,603
Wisconsin	5,478	12,155	17,559	7,361	4,626	9,954
West North Central	**83,627**	**122,531**	**143,904**	**146,471**	**165,260**	**177,585**
Iowa	2,704	5,439	8,094	7,663	12,879	23,937
Kansas	65,970	85,887	100,497	103,696	115,350	105,570
Minnesota	4,633	6,537	5,114	337	3,106	9,558
Missouri	6,617	14,174	19,210	25,087	22,507	23,574
Nebraska	3,581	9,931	10,820	3,681	11,378	14,374
North Dakota	-	-	-	-	-	-
South Dakota	122	561	169	7	40	573
South Atlantic	**185,519**	**184,549**	**187,068**	**159,302**	**142,487**	**129,873**
Delaware	4,896	6,652	4,303	627	493	817
District of Columbia	-	-	-	-	-	-
Florida	163,137	159,104	163,052	151,257	133,923	123,501
Georgia	2,804	3,767	2,404	4,828	6,508	4,637
Maryland	6,092	5,344	9,775	294	61	62
North Carolina	787	1,519	5			1
South Carolina	5,243	5,578	3,600	1,112	-	203
Virginia	2,342	2,454	3,844	1,170	1,486	492
West Virginia	218	132	86	14	16	161
East South Central	**79,184**	**97,021**	**69,956**	**52,606**	**44,092**	**37,599**
Alabama	1,979	1,565	8,161	7,820	4,445	4,442
Kentucky	2,643	1,938	996	2,271	739	786
Mississippi	74,562	93,517	60,799	42,515	38,908	32,372
Tennessee	-	-	-	-	-	-
West South Central	**2,209,198**	**2,314,272**	**2,210,561**	**2,318,539**	**2,228,608**	**2,113,501**
Arkansas	57,278	61,410	30,901	7,345	7,098	15,578
Louisiana	430,868	435,892	407,425	388,828	360,218	364,686
Oklahoma	297,424	340,507	347,822	365,418	348,293	344,219
Texas	1,423,629	1,476,463	1,424,414	1,556,948	1,512,999	1,389,016
Mountain	**168,250**	**164,231**	**193,944**	**176,616**	**171,756**	**165,228**
Arizona	60,917	51,776	53,216	58,264	31,199	26,269
Colorado	12,563	31,090	32,181	28,272	32,818	40,694
Idaho	17	49	475	44	714	116
Montana	2,206	4,260	1,897	762	862	481
Nevada	47,895	29,055	43,155	23,376	33,308	26,606
New Mexico	42,408	44,069	57,647	63,069	68,398	68,815
Utah	2,158	3,862	5,306	2,765	4,394	2,230
Wyoming	86	49	65	62	62	13
Pacific	**690,902**	**539,059**	**475,979**	**318,278**	**381,332**	**312,974**
California	690,245	536,204	472,291	317,089	380,344	312,156
Oregon	197	2,700	3,498	1,189	988	818
Washington	461	155	190	-	-	-
Total	**3,673,120**	**3,690,918**	**3,469,240**	**3,230,912**	**3,188,830**	**3,032,134**

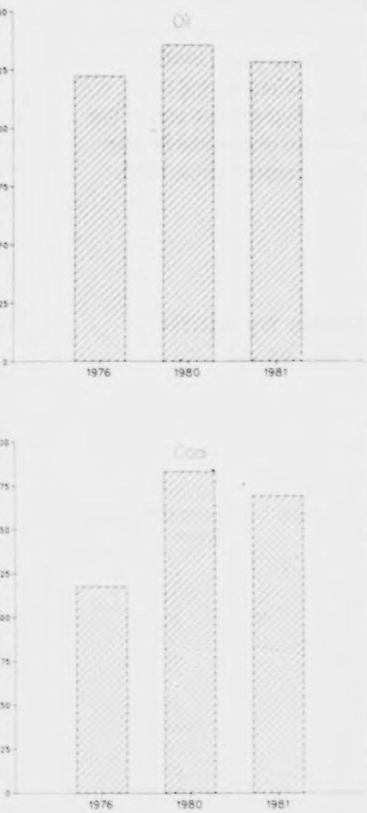
* = Number less than 0.5 rounded to zero.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

8. Fuel Stocks

Stocks at Electric Utilities



Source: Federal Power Commission Form 4.

Electric utility coal stocks decreased by the end of 1981 to a level 7.7 percent below that reported at the end of 1980. Coal stocks were relatively high at the end of 1980 because electric utilities increased their stockpiles of coal in preparation for the expected United Mine Workers (UMW) strike that began March 21, 1981.

The 72-day strike by mine workers caused utility stocks to greatly decrease by the strike's end in June. Although no utility was reported in danger of running out of coal during the strike, some utilities implemented temporary measures to conserve their coal supply. This included using oil- or natural gas-fired units (normally used only during periods of high usage of electricity) to produce electricity instead of the usual coal-fired baseload units.

Published accounts of the negotiated agreement between coal labor and management indicated that UMW members won a 40 percent increase in wages and benefits in the 40-month new contract. The impact of the agreement on coal prices to electric utilities can be observed in Chapter 10 (Fuel Costs).

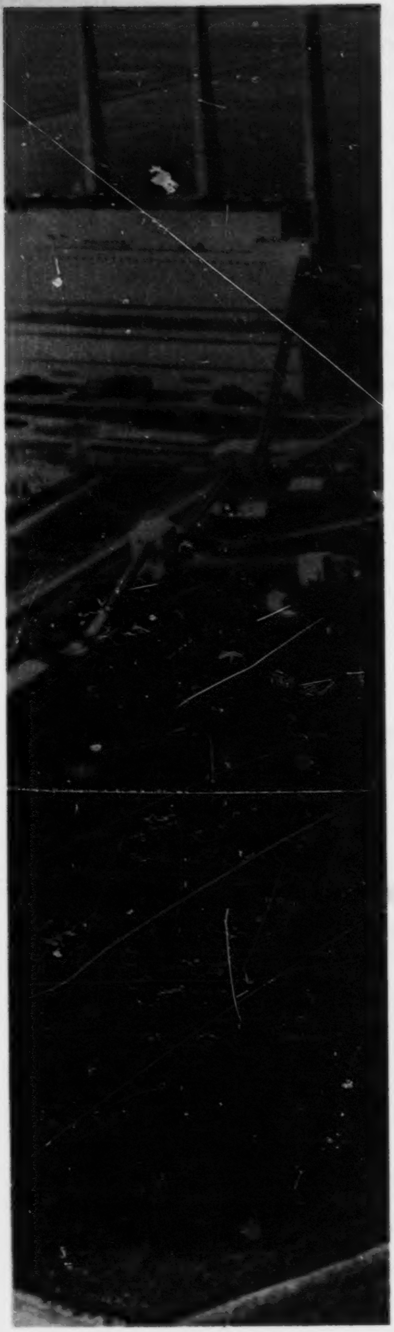
Utility stocks of oil at the end of 1981 decreased 5.3 percent from those reported a year earlier. Part of the reason for the drop in oil stocks is that utilities are decreasing their use of relatively expensive oil and natural gas by converting units fired by these fuels to coal-fired units. Table 94 below shows utility stocks of coal and oil for the years 1976-1981 while the bar charts at left show utilities' stocks of coal and oil for 1981, 1980, and 1976.

Table 94. Coal and Oil Stocks at Electric Utilities in the United States, as of December 31, 1981

Year	Coal Stocks[1]	Percent Change From Previous Year	Oil Stocks[2]	Percent Change From Previous Year
1981	168,893,288	-7.7	128,135,508	-5.3
1980	183,009,667	14.6	135,374,234	3.0
1979	159,713,597	24.6	131,422,361	10.6
1978	128,224,814	-3.7	118,787,554	-17.5
1977	133,219,397	13.4	144,030,671	18.4
1976	117,435,944	-	121,695,856	-

[1] In short tons.
[2] In barrels.
Source: Federal Power Commission Form 4.

Fuel Stocks (continued)



Coal Stocks By NERC Region

By the end of 1981, ECAR's coal stocks decreased the greatest amount from 1980, 19.1 percent, among the nine NERC regions, Alaska, and Hawaii. MAIN decreased its coal stocks 18.2 percent during the same period while Alaska decreased its stocks 17.7 percent.

The highest reported increase in coal stocks between the end of 1980 and 1981 was by ERCOT, which managed a 39.9 percent increase in coal stocks. Between 1976 and 1981, SWPP increased its coal stocks the most, 485.5 percent. At the other end of the scale, Alaska has decreased its coal stocks by 32.8 percent since 1976.

Table 95. Coal Stocks at Electric Utilities by NERC Region, Alaska, and Hawaii, as of December 31, 1981

(Thousand Short Tons)

North American Electric Reliability Council Region, Alaska, and Hawaii	Coal Stocks as of December 31, 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	41,541	-19.1	17.3
ERCOT	3,953	39.9	NM
MAAC	11,498	4.0	25.0
MAIN	19.070	-18.2	12.4
MARCA (U.S.)	17,119	-15.8	36.6
NPCC (U.S.)	2,231	12.7	1.7
SERC	30,696	-14.1	13.0
SWPP	21,225	29.1	485.5
WSCC (U.S.)	21,556	8.1	108.9
Contiguous U.S.	**166,889**	**-7.7**	**43.8**
Alaska	4	-17.7	-32.8
Hawaii	-	-	-
Total U.S.	**166,893**	**-7.7**	**43.8**

NM=Not meaningful. Percent difference cannot be calculated because 1976 value is zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Oil Stocks By NERC Region

Among NERC Regions, Alaska, and Hawaii, MARCA oil stocks decreased the greatest amount between 1980 and 1981, 34.2 percent. Major decreases in oil stocks were also reported by SWPP, 17.3 percent, and WSCC, 12.7 percent. Hawaii reported the highest increase in oil stocks, 21.0 percent, between 1980 and 1981, followed by ECAR with a reported increase of 18.5 percent. Between 1976 and 1981, MAIN increased its oil stocks the most, 173.3 percent. Meanwhile, MARCA reported it cut its oil stocks by more than half since 1976, 52.5 percent, the largest decrease noted among NERC regions for this time period.

Fuel Stocks (continued)

Table 96. Oil Stocks at Electric Utilities by NERC Region, Alaska, and Hawaii, as of December 31, 1981

(Thousand Barrels)

North American Electric Reliability Council Region, Alaska, and Hawaii	Oil Stocks as of December 31, 1981	Percent Change from 1980	Percent Difference from 1976
ECAR	4745	18.5	32.5
ERCOT	11,820	12.9	-14.0
MAAC	10,013	-5.3	33.5
MAIN	6,673	13.1	173.3
MARCA (U.S.)	2,255	-34.2	-52.5
NPCC (U.S.)	21,045	12.3	6.3
SERC	19,054	-7.2	12.8
SWPP	9,416	-17.3	-3.8
WSCC (U.S.)	42,154	-12.7	-0.7
Contiguous U.S.	**127,174**	**-5.5**	**5.1**
Alaska	201	-4.7	1.5
Hawaii	760	21.0	43.4
Total U.S.	**128,136**	**-5.3**	**5.3**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Coal Stocks By Census Region

Census Regions were almost evenly split between those that reported increases in coal stocks and those that reported decreases between 1980 and 1981. Six of the 10 regions reported decreases in coal stocks, with the East South Central Region's 21.1 percent decrease being the highest. Of those that reported increases during this same period, the West South Central Region reported the largest increase of 49.8 percent. Between 1976 and 1981, the West South Central Region also reported the largest increase in coal stocks, a huge 2,257.9 percent increase. Alaska reported the largest decrease for the 1976-1981 period, 32.8 percent.

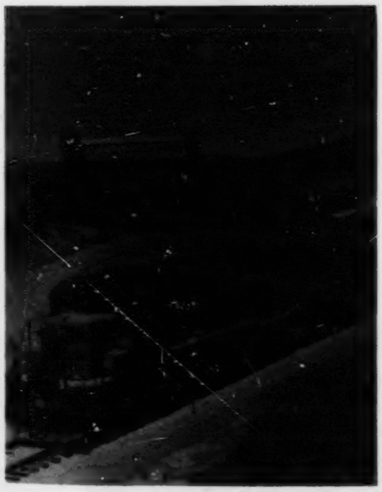


Table 97. Coal Stocks at Electric Utilities by Census Region, as of December 31, 1981

(Thousand Short Tons)

Census Region	Coal Stocks as of December 31, 1981	Percent Change from 1980	Percent Difference from 1976
New England	741	25.8	0.1
Middle Atlantic	14,469	5.1	19.2
East North Central	45,192	-16.8	14.7
West North Central	24,993	-18.3	49.3
South Atlantic	23,162	-8.9	20.2
East South Central	20,787	-21.1	13.1
West South Central	17,986	49.8	2,257.9
Mountain	19,425	9.5	129.8
Pacific Contiguous	2,133	-3.0	39.5
Pacific Noncontiguous	4	-17.7	-32.8
Total U.S.	**168,893**	**-7.7**	**43.8**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Oil Stocks By Census Region

More than half of the Census Regions reported decreases in oil stocks between 1980 and 1981. Of the six regions that reported decreases, the West North Central Region's 29.9 percent decrease in oil stocks was the largest reported decrease, followed by the East South Central Region's decrease of 20.4 percent. The largest increase during this period was reported by the East North Central Region, 16.3 percent. Between 1976 and 1981, the East North Central Region reported the largest increase in oil stocks, 92.8 percent, while the West North Central Region reported the largest decrease for the 1976-1981 period, 15.2 percent.

Table 98. Oil Stocks at Electric Utilities by Census Region, as of December 31, 1981

(Thousand Barrels)

Census Region	Oil Stocks as of December 31, 1981	Percent Change from 1980	Percent Difference from 1976
New England	7,386	7.7	6.6
Middle Atlantic	20,223	13.9	7.2
East North Central	10,381	16.3	92.8
West North Central	4,240	-29.9	-15.2
South Atlantic	21,573	-10.7	7.2
East South Central	3,455	-20.4	7.0
West South Central	17,987	-2.1	-6.8
Mountain	5,721	-10.1	16.0
Pacific Contiguous	36,209	-13.2	-2.7
Pacific Noncontiguous	961	14.5	32.1
Total U.S.	**126,136**	**-5.3**	**5.3**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

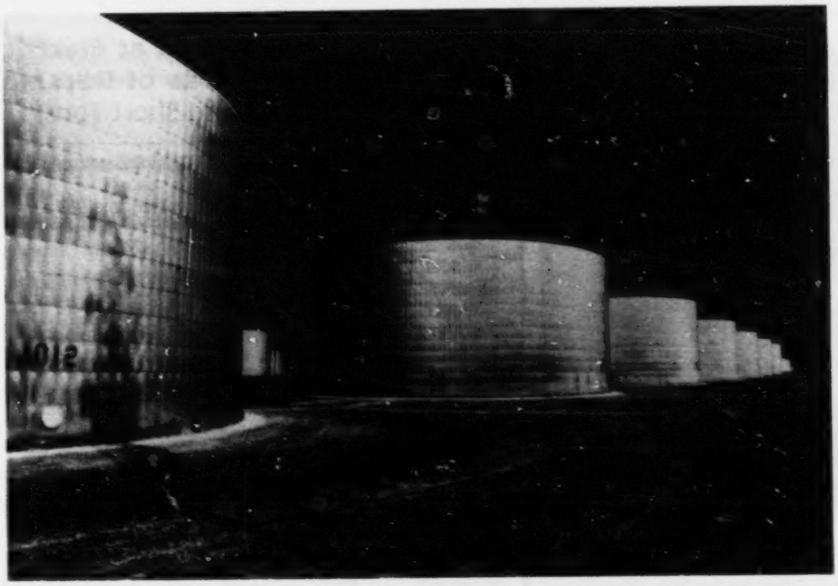
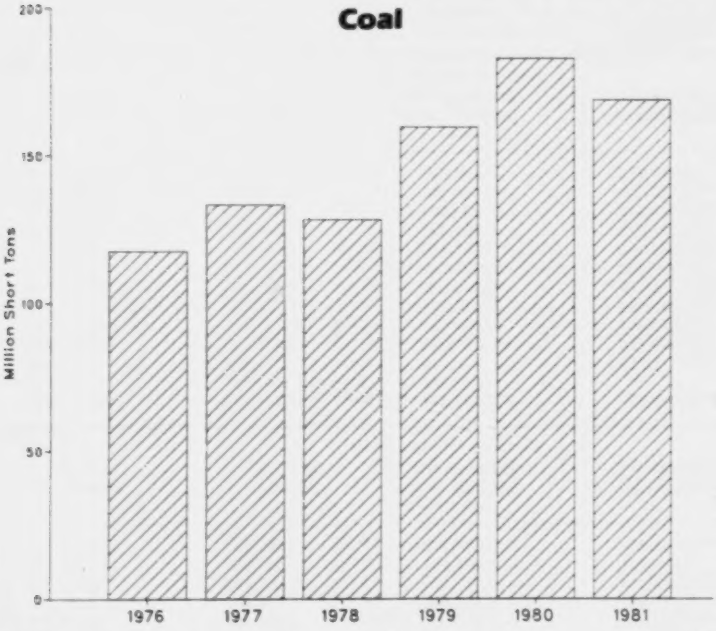


Table 99. Coal and Oil Stocks at Electric Utilities in the United States, as of December 31, 1976-1981

Year	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
1981	166,893,285	112,379,746	15,755,762	128,135,508
1980	183,009,667	117,227,371	18,146,863	135,374,234
1979	159,713,597	111,120,880	20,301,481	131,422,361
1978	128,224,814	102,401,778	16,385,776	118,787,554
1977	133,219,397	124,749,892	19,280,779	144,030,671
1976	117,435,944	106,992,643	14,703,213	121,695,856

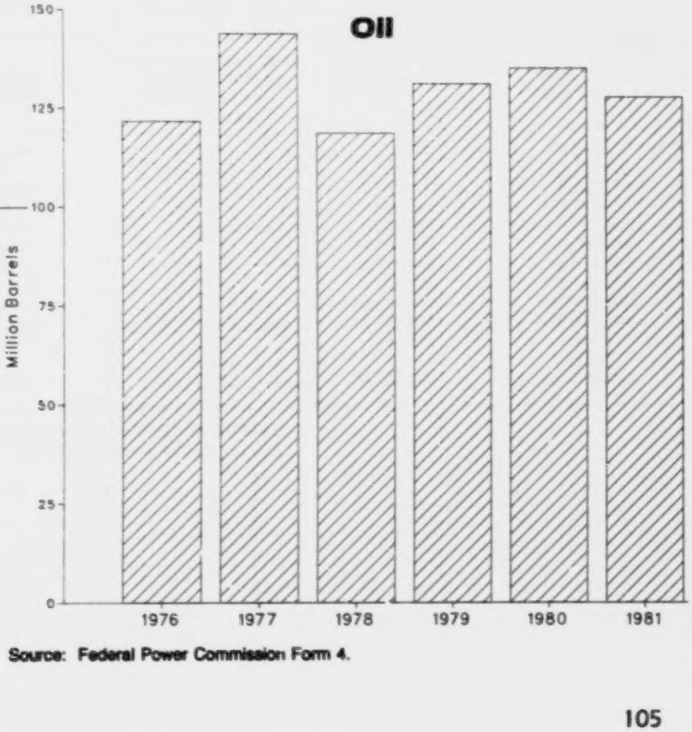
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Figure 15. Stocks of Coal at Electric Utilities, as of December 31, 1976-1981



Source: Federal Power Commission Form 4.

Figure 16. Stocks of Oil at Electric Utilities, as of December 31, 1976-1981



Source: Federal Power Commission Form 4.

Table 100. Coal and Oil Stocks at Electric Utilities by NERC Region, Alaska, and Hawaii, as of December 31, 1976-1981

1981

North American Electric Reliability Council Region, Alaska, and Hawaii	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
ECAR	41,540,594	3,785,738	958,812	4,744,550
ERCOT	3,953,474	10,790,830	1,028,817	11,819,647
MAAC	11,497,885	8,246,511	1,765,989	10,012,500
MAIN	19,070,095	6,211,815	461,195	6,673,010
MARCA(U.S.)	17,119,294	926,129	1,329,215	2,255,344
NPCC(U.S.)	2,230,736	20,370,546	674,611	21,045,157
SERC	30,695,620	14,546,041	4,508,236	19,054,277
SWPP	21,224,904	8,167,306	1,248,204	9,415,510
WSCC(U.S.)	21,556,365	38,646,323	3,507,762	42,154,085
Contiguous U.S.	**168,888,967**	**111,691,239**	**15,482,841**	**127,174,080**
Alaska	4,321	0	200,966	200,966
Hawaii	-	688,507	71,955	760,462
Total U.S.	**168,893,288**	**112,379,746**	**15,755,762**	**128,135,508**

1980

North American Electric Reliability Council Region, Alaska, and Hawaii	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
ECAR	51,370,973	2,864,802	1,138,338	4,003,140
ERCOT	2,825,998	10,496,581	1,172,818	11,669,399
MAAC	11,057,819	8,894,997	1,676,956	10,571,953
MAIN	23,321,826	5,251,438	649,454	5,900,892
MARCA(U.S.)	20,329,180	1,097,418	2,331,914	3,429,332
NPCC(U.S.)	1,979,442	18,088,748	649,719	18,738,467
SERC	35,748,178	15,859,489	4,681,643	20,541,132
SWPP	16,438,534	10,015,234	1,375,583	11,390,817
WSCC(U.S.)	19,932,464	44,092,325	4,197,455	48,289,780
Contiguous U.S.	**183,004,414**	**116,661,032**	**17,873,880**	**134,534,912**
Alaska	5,253	0	211,456	211,456
Hawaii	-	566,339	61,527	627,866
Total U.S.	**183,009,667**	**117,227,371**	**18,146,863**	**135,374,234**

1979

North American Electric Reliability Council Region, Alaska, and Hawaii	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
ECAR	44,264,202	3,984,715	1,056,997	5,041,712
ERCOT	1,394,361	9,237,103	1,363,082	10,600,185
MAAC	10,042,914	7,370,460	1,881,493	9,251,953
MAIN	18,770,310	4,675,261	708,860	5,384,121
MARCA(U.S.)	19,055,219	3,015,252	2,431,721	5,446,973
NPCC(U.S.)	2,158,293	23,744,799	934,803	24,679,602
SERC	35,944,296	15,701,543	5,449,622	21,151,165
SWPP	12,671,858	12,673,860	1,601,390	14,275,250
WSCC(U.S.)	15,407,906	30,183,540	4,587,383	34,770,923
Contiguous U.S.	**159,709,359**	**110,586,533**	**20,015,351**	**130,601,884**
Alaska	4,238	0	221,887	221,887
Hawaii	-	534,347	64,243	598,590
Total U.S.	**159,713,597**	**111,120,880**	**20,301,481**	**131,422,361**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 100. Coal and Oil Stocks at Electric Utilities by NERC Region, Alaska, and Hawaii, as of December 31, 1978 (continued)

1978

North American Electric Reliability Council Region, Alaska, and Hawaii	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
ECAR	38,112,047	3,367,254	916,349	4,283,603
ERCOT	1,969,296	10,994,566	1,451,309	12,445,875
MAAC	8,901,424	7,403,351	1,780,341	9,183,692
MAIN	15,428,331	4,860,724	600,465	5,461,189
MARCA(U.S.)	12,449,600	2,821,022	1,702,516	4,523,538
NPCC(U.S.)	1,967,266	19,557,030	704,577	20,261,607
SERC	29,607,806	14,782,036	4,910,744	19,692,780
SWPP	8,602,814	10,814,601	1,502,934	12,317,535
WSCC(U.S.)	11,184,621	27,162,084	2,568,878	29,730,962
Contiguous U.S.	**128,223,225**	**101,762,668**	**16,138,113**	**117,900,781**
Alaska	1,589	0	178,538	178,538
Hawaii	–	639,110	69,125	708,235
Total U.S.	**128,224,814**	**102,401,778**	**16,385,776**	**118,787,554**

1977

North American Electric Reliability Council Region, Alaska, and Hawaii	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
ECAR	41,404,414	3,216,413	1,034,156	4,250,569
ERCOT	1,999,758	11,962,797	1,453,751	13,416,548
MAAC	12,553,382	7,549,861	2,260,663	9,810,524
MAIN	15,866,319	2,966,204	613,515	3,579,719
MARCA(U.S.)	12,073,620	2,671,942	2,274,319	4,946,261
NPCC(U.S.)	2,203,199	20,510,485	770,883	21,281,368
SERC	30,115,806	15,274,154	4,979,349	20,253,503
SWPP	7,276,719	10,822,352	1,401,388	12,223,740
WSCC(U.S.)	9,719,851	49,227,189	3,847,242	53,074,431
Contiguous U.S.	**133,213,070**	**124,201,397**	**18,635,266**	**142,836,663**
Alaska	6,327	1,444	183,124	184,568
Hawaii	–	547,051	462,389	1,009,440
Total U.S.	**133,219,397**	**124,749,892**	**19,280,779**	**144,030,671**

1976

North American Electric Reliability Council Region, Alaska, and Hawaii	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
ECAR	35,424,793	2,878,307	703,098	3,581,405
ERCOT	0	12,537,660	1,202,829	13,740,489
MAAC	9,199,942	5,797,918	1,703,596	7,501,514
MAIN	16,967,121	1,883,049	558,954	2,442,003
MARCA(U.S.)	12,529,031	2,885,084	1,836,799	4,751,883
NPCC(U.S.)	2,194,015	19,043,348	760,726	19,804,074
SERC	27,171,721	13,144,922	3,749,712	16,894,634
SWPP	3,624,801	8,762,789	1,030,425	9,793,214
WSCC(U.S.)	10,318,091	39,575,898	2,883,070	42,458,968
Contiguous U.S.	**117,429,515**	**106,508,975**	**14,459,209**	**120,968,184**
Alaska	6,429	1,621	196,394	198,015
Hawaii	–	482,047	47,610	529,657
Total U.S.	**117,435,944**	**106,992,643**	**14,703,213**	**121,695,856**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 101. Coal and Oil Stocks at Electric Utilities by Census Region and State, as of December 31, 1981

Census Region and State	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
New England	**741,495**	**7,040,619**	**344,999**	**7,385,618**
Connecticut	–	2,766,507	127,225	2,893,732
Maine	–	918,608	25,364	943,972
Massachusetts	519,164	2,892,988	146,977	3,039,965
New Hampshire	178,671	319,952	7,861	327,813
Rhode Island	38,179	142,564	2,032	144,596
Vermont	5,461	0	35,540	35,540
Middle Atlantic	**14,468,987**	**18,294,265**	**1,928,393**	**20,222,658**
New Jersey	694,938	1,632,823	978,529	2,611,352
New York	1,489,241	13,329,927	329,612	13,659,539
Pennsylvania	12,284,808	3,331,515	620,252	3,951,767
East North Central	**45,192,452**	**9,195,572**	**1,185,864**	**10,381,436**
Illinois	10,633,046	6,028,094	198,189	6,226,283
Indiana	9,316,367	218,749	330,203	548,952
Michigan	8,576,491	2,102,221	245,884	2,348,105
Ohio	10,196,462	640,542	191,359	831,901
Wisconsin	6,470,086	205,966	220,229	426,195
West North Central	**24,993,393**	**2,210,564**	**2,029,037**	**4,239,601**
Iowa	4,905,977	126,971	464,565	591,536
Kansas	4,181,613	1,110,434	190,345	1,300,779
Minnesota	4,232,908	203,556	296,278	499,834
Missouri	5,402,494	240,070	598,282	838,352
Nebraska	1,884,399	394,429	137,176	531,605
North Dakota	3,822,660	62,490	205,100	267,590
South Dakota	563,342	72,614	137,291	209,905
South Atlantic	**23,161,557**	**17,848,694**	**3,724,327**	**21,573,021**
Delaware	112,580	864,080	33,639	897,719
District of Columbia	–	100,445	18,418	118,863
Florida	2,533,188	9,792,275	2,086,006	11,878,281
Georgia	5,630,212	800,402	227,465	1,027,867
Maryland	1,105,267	2,742,091	277,666	3,019,757
North Carolina	4,505,519	69,760	261,039	330,799
South Carolina	2,052,075	1,194,623	517,477	1,712,100
Virginia	1,074,906	2,033,421	296,098	2,329,519
West Virginia	6,147,810	251,597	6,519	258,116
East South Central	**20,787,497**	**2,251,241**	**1,203,548**	**3,454,789**
Alabama	4,496,177	51,043	212,522	263,565
Kentucky	9,358,488	159,277	48,189	207,466
Mississippi	1,328,748	2,024,120	30,546	2,054,666
Tennessee	5,604,084	16,801	912,291	929,092
West South Central	**17,985,978**	**16,294,248**	**1,693,034**	**17,987,282**
Arkansas	1,832,844	1,391,703	146,029	1,537,732
Louisiana	4,707,696	2,488,806	51,206	2,540,012
Oklahoma	5,893,452	741,681	353,742	1,095,423
Texas	5,551,986	11,672,058	1,142,057	12,814,115
Mountain	**19,424,649**	**4,089,516**	**1,631,438**	**5,720,954**
Arizona	4,317,067	2,193,876	860,582	3,054,458
Colorado	5,935,257	438,568	516,522	955,090
Idaho	–	–	47,530	47,530
Montana	418,341	153,834	42,734	196,568
Nevada	1,257,410	515,436	135,036	650,472
New Mexico	2,105,773	659,057	19,403	678,460
Utah	946,653	99,079	9,060	108,139
Wyoming	4,444,148	29,666	571	30,237
Pacific	**2,132,959**	**34,466,520**	**1,742,201**	**36,208,721**
California	–	34,319,460	1,235,717	35,555,177
Oregon	394,303	8,571	362,644	371,215
Washington	1,738,656	138,489	143,840	282,329
Pacific Noncontiguous	**4,321**	**688,507**	**272,921**	**961,428**
Alaska	4,321	0	200,966	200,966
Hawaii	–	688,507	71,955	760,462
Total U.S.	**168,893,288**	**112,379,746**	**15,755,762**	**128,135,508**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 101. Coal and Oil Stocks at Electric Utilities by Census Region and State, as of December 31, 1980 (continued)

Census Region and State	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
New England	**589,244**	**6,547,757**	**311,836**	**6,859,593**
Connecticut	-	2,419,060	122,468	2,541,528
Maine	-	869,966	28,394	898,360
Massachusetts	262,330	2,715,830	114,304	2,830,134
New Hampshire	288,735	412,924	8,803	421,727
Rhode Island	38,179	129,977	2,028	132,005
Vermont	0	0	35,839	35,839
Middle Atlantic	**13,765,437**	**15,932,275**	**1,822,082**	**17,754,357**
New Jersey	753,589	1,382,250	811,478	2,193,728
New York	1,390,198	11,540,991	337,883	11,878,874
Pennsylvania	11,621,650	3,009,034	672,721	3,681,755
East North Central	**54,336,839**	**7,225,878**	**1,700,140**	**8,926,018**
Illinois	11,680,567	5,024,178	244,968	5,269,146
Indiana	12,262,471	253,440	316,268	569,708
Michigan	9,430,293	1,080,082	204,564	1,284,646
Ohio	13,708,817	669,590	412,968	1,082,558
Wisconsin	7,254,691	198,588	521,372	719,960
West North Central	**30,598,831**	**3,019,527**	**3,025,227**	**6,044,754**
Iowa	5,833,737	181,994	581,981	763,975
Kansas	4,667,061	1,629,243	223,290	1,852,533
Minnesota	4,783,066	310,817	836,178	1,146,995
Missouri	7,347,897	363,843	753,102	1,116,945
Nebraska	2,351,809	425,577	242,153	667,730
North Dakota	5,149,242	29,911	238,072	267,983
South Dakota	466,019	78,142	150,451	228,593
South Atlantic	**25,424,835**	**20,332,265**	**3,828,795**	**24,161,060**
Delaware	429,546	1,002,318	36,545	1,038,863
District of Columbia	-	159,224	0	159,224
Florida	1,496,612	10,098,477	2,158,328	12,256,805
Georgia	6,097,601	899,227	150,048	1,049,275
Maryland	1,376,000	3,760,894	349,788	4,110,682
North Carolina	4,769,313	84,239	292,611	376,850
South Carolina	2,102,167	1,439,123	519,419	1,958,542
Virginia	1,250,524	2,632,323	318,076	2,950,399
West Virginia	7,903,072	256,440	3,980	260,420
East South Central	**26,346,730**	**3,021,095**	**1,321,433**	**4,342,528**
Alabama	5,733,974	53,595	256,900	310,495
Kentucky	9,947,544	184,639	39,764	224,403
Mississippi	1,464,857	2,765,602	33,828	2,799,430
Tennessee	9,200,355	17,259	990,941	1,008,200
West South Central	**12,002,625**	**16,558,587**	**1,814,437**	**18,373,024**
Arkansas	1,964,376	1,629,975	107,448	1,737,423
Louisiana	-	2,826,612	53,160	2,879,772
Oklahoma	5,156,591	746,077	357,500	1,103,577
Texas	4,861,658	11,355,923	1,296,329	12,652,252
Mountain	**17,741,540**	**4,586,374**	**1,779,445**	**6,365,819**
Arizona	5,540,805	2,645,179	968,447	3,613,626
Colorado	6,366,500	497,742	539,926	1,037,668
Idaho	-	-	47,712	47,712
Montana	415,814	152,854	42,837	195,691
Nevada	1,084,039	546,705	149,089	695,794
New Mexico	1,429,061	637,958	20,687	658,645
Utah	1,092,316	66,394	9,576	75,970
Wyoming	1,813,005	39,542	1,171	40,713
Pacific	**2,198,333**	**39,437,274**	**2,270,485**	**41,707,759**
California	-	39,269,798	1,296,576	40,566,374
Oregon	494,254	4,730	887,193	891,923
Washington	1,704,079	162,746	86,716	249,462
Pacific Noncontiguous	**5,253**	**566,339**	**272,983**	**839,322**
Alaska	5,253	0	211,456	211,456
Hawaii	-	566,339	61,527	627,866
Total U.S.	**183,009,667**	**117,227,371**	**18,145,863**	**135,374,234**

Note: Totals may not equal sum of components because of independent rouncing.
Source: Federal Power Commission Form 4.

Table 101. Coal and Oil Stocks at Electric Utilities by Census Region and State, as of December 31, 1979 (continued)

Census Region and State	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
New England	**591,492**	**9,537,278**	**595,875**	**10,133,153**
Connecticut	0	3,505,186	180,703	3,685,889
Maine	-	1,016,739	28,686	1,045,425
Massachusetts	344,398	3,921,473	309,891	4,231,364
New Hampshire	197,878	669,329	8,921	678,250
Rhode Island	38,178	424,551	2,218	426,769
Vermont	11,038	0	65,456	65,456
Middle Atlantic	**12,937,552**	**19,198,768**	**2,245,721**	**21,444,489**
New Jersey	828,934	1,740,789	1,143,330	2,884,119
New York	1,566,801	14,207,521	338,928	14,546,449
Pennsylvania	10,541,817	3,250,458	763,463	4,013,921
East North Central	**45,652,684**	**7,875,381**	**1,733,776**	**9,609,157**
Illinois	9,391,278	4,455,369	336,831	4,792,200
Indiana	11,372,391	289,216	175,703	464,919
Michigan	8,166,029	2,077,823	221,226	2,299,049
Ohio	10,916,049	860,088	532,660	1,392,748
Wisconsin	5,806,937	192,885	467,356	660,241
West North Central	**28,504,943**	**3,697,971**	**3,014,144**	**6,712,115**
Iowa	6,369,699	268,024	673,798	941,822
Kansas	4,996,957	2,221,010	408,175	2,629,185
Minnesota	4,966,589	317,457	481,853	799,310
Missouri	6,335,165	387,960	799,051	1,187,011
Nebraska	2,485,626	431,205	283,701	714,906
North Dakota	2,869,932	14,621	237,345	251,966
South Dakota	480,975	57,694	130,221	187,915
South Atlantic	**24,042,458**	**19,825,093**	**4,597,081**	**24,422,174**
Delaware	302,589	829,908	38,633	868,541
District of Columbia	-	139,245	17,584	156,829
Florida	1,699,723	9,940,782	2,841,941	12,782,723
Georgia	5,722,945	1,020,812	211,646	1,232,458
Maryland	1,340,625	3,606,683	350,960	3,957,643
North Carolina	5,188,855	111,913	290,361	402,274
South Carolina	1,645,010	1,452,942	494,995	1,947,937
Virginia	1,577,685	2,493,056	343,340	2,836,396
West Virginia	6,565,026	229,752	7,621	237,373
East South Central	**25,911,118**	**3,711,710**	**1,358,396**	**5,070,106**
Alabama	5,646,458	49,930	264,467	314,397
Kentucky	9,954,941	165,560	48,682	214,242
Mississippi	1,036,730	3,486,374	38,033	3,524,407
Tennessee	9,272,989	9,846	1,007,214	1,017,060
West South Central	**6,663,135**	**16,627,352**	**1,952,181**	**18,579,533**
Arkansas	617,191	1,786,584	111,686	1,898,270
Louisiana	-	3,867,499	28,324	3,895,823
Oklahoma	2,911,405	868,698	382,159	1,250,857
Texas	3,134,539	10,104,571	1,430,012	11,534,583
Mountain	**13,901,374**	**4,237,609**	**1,588,389**	**5,825,998**
Arizona	4,064,225	2,436,495	905,217	3,341,712
Colorado	4,840,230	414,859	461,798	876,657
Idaho	-	-	47,789	47,789
Montana	489,201	118,159	42,934	161,093
Nevada	702,364	473,816	98,650	572,466
New Mexico	1,586,427	672,213	21,515	693,728
Utah	797,982	103,692	9,369	113,061
Wyoming	1,420,945	18,375	1,117	19,492
Pacific	**1,504,603**	**25,875,371**	**2,929,788**	**28,805,159**
California	-	25,784,444	1,763,272	27,547,716
Oregon	-	0	1,087,069	1,087,069
Washington	1,504,603	90,927	79,447	170,374
Pacific Noncontiguous	**4,238**	**534,347**	**286,130**	**820,477**
Alaska	4,238	0	221,887	221,887
Hawaii	-	534,347	64,243	598,590
Total U.S.	**159,713,597**	**111,120,880**	**20,301,481**	**131,422,361**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 101. Coal and Oil Stocks at Electric Utilities by Census Region and State, as of December 31, 1978 (continued)

Census Region and State	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
New England	**679,029**	**7,422,258**	**365,570**	**7,787,828**
Connecticut	6,046	3,185,499	151,362	3,336,861
Maine	-	702,204	24,709	726,913
Massachusetts	392,120	2,941,132	113,400	3,054,532
New Hampshire	230,498	342,504	8,469	350,973
Rhode Island	38,179	250,919	1,708	252,627
Vermont	12,188	0	65,922	65,922
Middle Atlantic	**11,818,486**	**17,488,707**	**2,143,902**	**19,632,609**
New Jersey	750,162	1,768,432	995,649	2,764,081
New York	1,288,257	12,134,772	339,007	12,473,779
Pennsylvania	9,780,067	3,585,503	809,246	4,394,749
East North Central	**37,824,156**	**7,580,243**	**1,394,437**	**8,974,680**
Illinois	7,605,893	4,723,452	278,198	5,001,650
Indiana	8,303,152	420,401	72,505	492,906
Michigan	7,396,094	1,520,689	200,427	1,721,116
Ohio	9,630,601	735,763	528,638	1,264,401
Wisconsin	4,888,416	179,938	314,669	494,607
West North Central	**19,512,635**	**3,013,912**	**2,362,261**	**5,376,173**
Iowa	3,888,907	214,032	468,189	682,221
Kansas	3,686,202	1,938,809	412,123	2,350,932
Minnesota	3,041,301	221,839	350,234	572,073
Missouri	5,268,800	222,231	725,788	948,019
Nebraska	666,912	327,947	263,344	591,291
North Dakota	2,505,580	41,111	29,820	70,931
South Dakota	454,933	47,943	112,763	160,706
South Atlantic	**23,547,326**	**18 682,645**	**4,087,236**	**22,769,881**
Delaware	159,043	810,073	34,484	844,557
District of Columbia	-	137,708	18,831	156,539
Florida	2,039,909	9,101,577	2,390,990	11,492,567
Georgia	5,078,108	768,707	218,487	987,194
Maryland	1,329,770	3,337,662	338,855	3,676,517
North Carolina	5,278,977	83,152	279,740	362,892
South Carolina	2,128,565	1,113,446	469,870	1,583,316
Virginia	1,253,150	3,102,116	328,974	3,431,090
West Virginia	6,279,804	228,204	7,005	235,209
East South Central	**18,448,040**	**2,508,056**	**1,316,298**	**3,824,354**
Alabama	5,588,856	45,802	269,315	315,117
Kentucky	7,721,968	117,045	51,300	168,345
Mississippi	739,052	2,345,209	42,216	2,387,425
Tennessee	4,398,164	-	953,467	953,467
West South Central	**5,206,492**	**18,034,798**	**2,089,181**	**20,123,979**
Arkansas	519,007	1,810,547	98,047	1,908,594
Louisiana	-	3,386,302	26,297	3,412,599
Oklahoma	1,466,133	856,635	350,221	1,206,856
Texas	3,221,352	11,981,314	1,614,616	13,595,930
Mountain	**9,567,017**	**2,990,606**	**918,968**	**3,909,574**
Arizona	1,644,949	1,576,486	461,492	2,037,978
Colorado	2,315,059	251,820	303,347	555,167
Idaho	-	-	44,387	44,387
Montana	404,917	137,800	6,607	144,407
Nevada	765,029	408,753	80,591	489,344
New Mexico	2,326,417	545,279	14,737	560,016
Utah	684,860	61,638	6,832	68,470
Wyoming	1,425,788	8,830	975	9,805
Pacific	**1,620,044**	**24,041,443**	**1,460,260**	**25,501,703**
California	-	23,917,717	1,033,363	24,951,080
Oregon	-	0	388,149	388,149
Washington	1,620,044	123,726	38,748	162,474
Pacific Noncontiguous	**1,589**	**639,110**	**247,663**	**886,773**
Alaska	1,589	0	178,538	178,538
Hawaii	-	639,110	69,125	708,235
Total U.S.	**128,224,814**	**102,401,778**	**16,385,776**	**118,787,554**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

Table 101. Coal and Oil Stocks at Electric Utilities by Census Region and State, as of December 31, 1977 (continued)

Census Region and State	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
New England	**689,261**	**6,813,971**	**436,102**	**7,250,073**
Connecticut	36,533	2,603,234	195,668	2,798,902
Maine	-	633,737	25,547	659,284
Massachusetts	475,997	2,761,170	115,734	2,876,904
New Hampshire	129,672	706,578	8,603	715,181
Rhode Island	38,179	109,252	1,470	110,722
Vermont	8,880	0	89,060	89,060
Middle Atlantic	**15,232,075**	**19,516,499**	**2,696,815**	**22,213,314**
New Jersey	983,460	1,667,744	1,359,836	3,027,580
New York	1,503,938	13,696,514	334,781	14,031,295
Pennsylvania	12,744,677	4,152,241	1,002,198	5,154,439
East North Central	**42,108,717**	**5,659,835**	**1,539,683**	**7,199,518**
Illinois	8,284,745	2,771,497	246,847	3,018,344
Indiana	8,905,917	486,662	70,169	556,831
Michigan	8,000,310	1,330,829	258,078	1,588,907
Ohio	12,336,267	820,135	510,949	1,331,084
Wisconsin	4,581,478	250,712	453,640	704,352
West North Central	**17,947,430**	**3,131,241**	**2,759,756**	**5,890,997**
Iowa	3,488,967	161,678	672,739	834,417
Kansas	2,415,058	1,879,413	452,420	2,331,833
Minnesota	3,585,107	293,503	609,628	903,131
Missouri	5,060,277	286,951	611,628	898,579
Nebraska	734,777	387,297	281,492	668,789
North Dakota	2,417,865	21,280	29,812	51,092
South Dakota	245,379	101,119	102,037	203,156
South Atlantic	**24,432,113**	**18,581,928**	**4,117,097**	**22,699,025**
Delaware	267,427	571,952	37,426	609,378
District of Columbia	-	143,801	17,728	161,529
Florida	1,936,046	9,246,391	2,485,700	11,732,091
Georgia	5,901,923	790,872	228,170	1,019,042
Maryland	1,798,619	2,891,731	347,522	3,239,253
North Carolina	4,958,517	92,358	290,171	382,529
South Carolina	1,904,776	1,378,964	481,238	1,860,202
Virginia	1,418,362	3,266,731	222,160	3,488,891
West Virginia	6,246,443	199,128	6,982	206,110
East South Central	**18,037,222**	**2,785,093**	**1,447,858**	**4,232,951**
Alabama	4,408,171	39,985	297,907	337,892
Kentucky	8,192,534	114,509	49,034	163,543
Mississippi	617,477	2,630,599	122,484	2,753,083
Tennessee	4,819,040	-	978,433	978,433
West South Central	**5,045,204**	**18,605,302**	**1,991,965**	**20,597,267**
Arkansas	496	1,637,670	109,417	1,747,087
Louisiana	-	3,339,129	24,045	3,363,174
Oklahoma	1,999,765	787,940	238,709	1,026,649
Texas	3,044,943	12,840,563	1,619,794	14,460,357
Mountain	**8,551,543**	**4,414,094**	**1,683,342**	**6,097,436**
Arizona	1,648,434	2,659,190	1,213,511	3,872,701
Colorado	2,762,158	430,087	294,858	724,945
Idaho	-	-	47,487	47,487
Montana	254,146	148,308	6,427	154,735
Nevada	1,039,181	508,905	99,769	608,674
New Mexico	923,864	548,304	12,269	560,573
Utah	720,020	84,575	7,341	91,916
Wyoming	1,203,740	34,725	1,680	36,405
Pacific	**1,159,505**	**44,693,434**	**1,962,648**	**46,656,082**
California	-	44,568,821	1,032,758	45,601,579
Oregon	-	0	891,892	891,892
Washington	1,159,505	124,613	37,998	162,611
Pacific Noncontiguous	**6,327**	**548,495**	**645,513**	**1,194,008**
Alaska	6,327	1,444	183,124	184,568
Hawaii	-	547,051	462,389	1,009,440
Total U.S.	**133,219,397**	**124,749,892**	**19,280,779**	**144,030,671**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

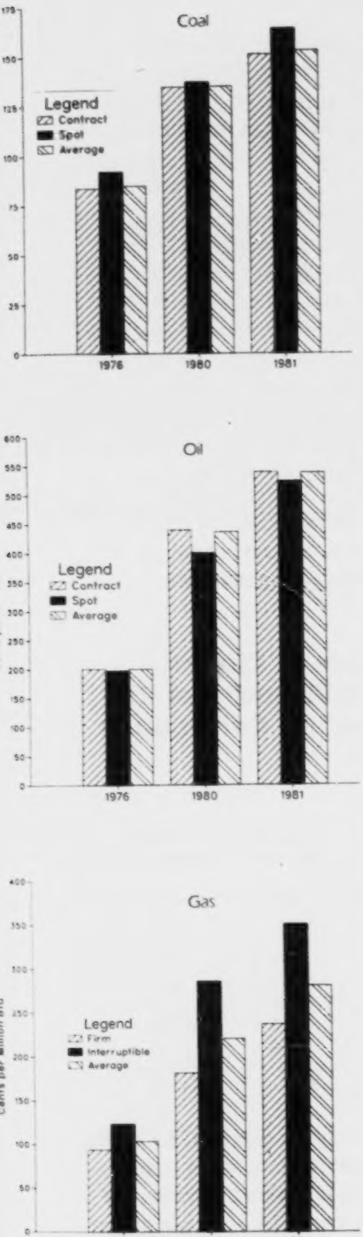
Table 101. Coal and Oil Stocks at Electric Utilities by Census Region and State, as of December 31, 1976 (continued)

Census Region and State	Coal Steam (Short Tons)	Oil Steam (Barrels)	Oil GT/IC (Barrels)	Total Oil (Barrels)
New England	**740,790**	**6,475,475**	**450,222**	**6,925,697**
Connecticut	29,207	2,708,720	221,621	2,930,341
Maine	0	659,047	26,964	686,011
Massachusetts	436,373	2,362,221	109,854	2,472,075
New Hampshire	228,246	530,688	8,720	539,408
Rhode Island	38,179	214,388	1,395	215,783
Vermont	8,785	411	81,668	82,079
Middle Atlantic	**12,139,176**	**16,847,550**	**2,011,630**	**18,859,180**
New Jersey	860,882	1,478,735	944,998	2,423,733
New York	1,453,225	12,567,873	310,504	12,878,377
Pennsylvania	9.825,069	2,800,942	756,128	3,557,070
East North Central	**39,410,574**	**4,238,828**	**1,145,935**	**5,384,763**
Illinois	9,363,655	1,713,955	230,600	1,944,555
indiana	7,368,832	396,582	60,982	457,564
Michigan	7,439,956	1,241,901	219,884	1,461,785
Ohio	9,745,505	667,124	353,845	1,020,969
Wisconsin	5,492,626	219,266	280,624	499,890
West North Central	**16,742,355**	**2,806,504**	**2,193,085**	**4,999,589**
Iowa	3,244,492	189,118	641,239	830,357
Kansas	1,279,743	1,642,964	388,755	2,031,719
Minnesota	4,445,779	277,379	446,020	723,399
Missouri	4,736,613	230,318	382,963	613,281
Nebraska	744,509	348,118	264,300	612,418
North Dakota	2,002,430	24,856	34,090	58,946
South Dakota	288,789	93,751	35,718	129,469
South Atlantic	**19,276,392**	**16,711,345**	**3,408,493**	**20,119,838**
Delaware	273,180	826,421	35,758	862,179
District of Columbia	0	43,217	17,192	60,409
Florida	1,647,294	7,912,751	2,067,037	9,979,788
Georgia	4,168,138	967,007	229,427	1,196,434
Maryland	920,911	2,780,672	347,353	3,128,025
North Carolina	4,497,351	69,267	200,163	269,430
South Carolina	1,186,080	1,125,046	298,239	1,423,285
Virginia	909,340	2,785,293	209,939	2,995,232
West Virginia	5,674,098	201,671	3,385	205,056
East South Central	**18,376,257**	**2,314,981**	**913,267**	**3,228,248**
Alabama	4,957,606	40,585	205,098	245,683
Kentucky	7,016,513	102,252	24,597	126,849
Mississippi	270,988	2,172,144	139,945	2,312,089
Tennessee	6,131,150	-	543,627	543,627
West South Central	**762,789**	**17,683,095**	**1,611,407**	**19,294,502**
Arkansas	-	1,380,567	75,548	1,456,115
Louisiana	-	2,002,684	25,191	2,027,875
Oklahoma	60,435	907,011	137,106	1,044,117
Texas	702,354	13,392,833	1,373,562	14,766,395
Mountain	**8,451,867**	**3,369,778**	**1,560,775**	**4,930,553**
Arizona	1,046,041	1,714,014	1,163,142	2,877,156
Colorado	3,096,362	277,251	261,414	538,665
Idaho	-	-	44,126	44,126
Montana	354,608	188,846	5,665	194,511
Nevada	730,584	494,447	63,352	557,799
New Mexico	1,129,881	588,945	12,043	600,988
Utah	816,416	66,116	8,758	74,874
Wyoming	1,277,975	40,159	2,275	42,434
Pacific	**1,529,315**	**36,061,419**	**1,164,395**	**37,225,814**
California	-	35,890,015	605,902	36,495,917
Oregon	-	0	519,509	519,509
Washington	1,529,315	171,404	38,964	210,388
Pacific Noncontiguous	**6,429**	**483,668**	**244,004**	**727,672**
Alaska	6,429	1,621	196,394	198,015
Hawaii	-	482,047	47,610	529,657
Total U.S.	**117,435,944**	**106,992,643**	**14,703,213**	**121,695,856**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 4.

9. Fuel Costs

Cost of Energy
for Electric Utilities



Source: Federal Power Commission Form 423.

Electric utilities in the contiguous United States paid record prices for fossil fuels during 1981. On a cost-per-million Btu basis, the cost of fossil fuels rose significantly from 1980, well ahead of the 8.9 percent increase in the Consumer Price Index for the same period. Interestingly, the cost of coal did not increase as fast as the cost of either oil or gas during 1981. This should give utilities added impetus to burn coal in new or converted units in the future.

The cost of all coal increased $3.55 per ton from 1980 to 1981. This translates into a cost of 153.2 cents per million Btu, an increase of 18.1 cents per million Btu or 13.4 percent. Generally, the increase in the cost of coal came about partially as a result of added wage and benefit costs included in a new contract between coal management and labor that went into effect in 1981. Published accounts of the negotiated agreement indicated that the United Mine Workers won a 40 percent increase in wages and benefits in the 40-month new contract.

During 1981, spot purchases of coal cost the utilities more than contract purchases. Utilities paid 164.4 cents per million Btu for spot purchases (an increase of 19.7 percent from 1980) and 151.3 cents per million Btu for contract purchases (an increase of 12.3 percent from 1980). In 1981, the cost of coal increased most in the New England and West South Central Census Regions from a year ago. The lowest increase in the cost of coal was found in the West North Central Census Region in 1981. The cost of coal (per million Btu) has risen an average of 12.6 percent per year since 1976.

In 1981, the domestic prices of crude oil and petroleum products continued to rise for two months following the full decontrol of petroleum prices in late January 1981, then decreased throughout the remainder of the year. Both the reduction in consumption and the ample worldwide supplies of crude oil put downward pressure on the prices of petroleum products.

Despite this downward pressure, however, the cost of a barrel of oil rose to an average of $33.47 per barrel in 1981 from $27.04 in 1980. The cost of oil per million Btu in 1981 was 538.7 cents, an increase of 23.4 percent from the average cost of 436.5 cents per million Btu in 1980. On a cost-per-million-Btu basis, this made oil more than 250 percent more expensive than coal and more than 90 percent more expensive than natural gas in 1981.

Table 102 below shows the cost per million Btu of coal, oil, and natural gas for the period 1976-1981. The bar charts at left illustrate the cost of coal, oil, and natural gas for 1981, 1980, and 1976.

Table 102. Cost of Fossil Fuel Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, in the Contiguous United States, 1976-1981

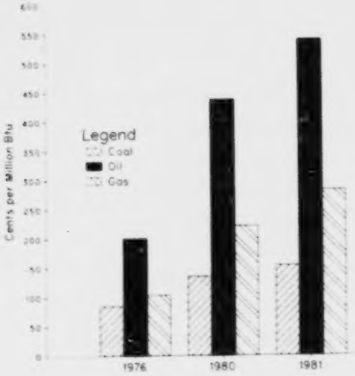
(Cents Per Million Btu)

Year	Cost of Coal Per 10^6 Btu	Percent Change from Previous Year	Cost of Oil Per 10^6 Btu	Percent Change from Previous Year	Cost of Gas Per 10^6 Btu	Percent Change from Previous Year
1981 ...	153.2	13.4	538.7	23.4	281.9	27.6
1980 ...	135.1	10.4	436.5	41.7	220.9	26.1
1979 ...	122.4	9.7	308.1	40.7	175.2	22.7
1978 ...	111.6	17.8	219.0	-2.9	142.8	10.4
1977 ...	94.7	11.7	225.5	12.9	129.4	25.1
1976 ...	84.8	-	199.8	-	103.4	-

Source: Federal Power Commission Form 423.

Fuel Costs (continued)

Cost of Coal, Oil, and Gas for Electric Utilities



Source: Federal Power Commission Form 423.

Contract purchases of oil cost significantly more than spot purchases in 1981. The average cost of contract purchases to utilities was 539.7 cents per million Btu (an increase of 22.8 percent from 1980) while the cost of spot purchases averaged 523.9 cents (an increase of 31.0 percent). During 1981, the cost of oil increased the most for utilities in the Mountain Census Region (an increase of 45.7 percent) while the lowest annual increase was recorded in the Middle Atlantic Census Region (18.7 percent). The cost of all oil (per million Btu) has risen an average of 21.9 percent per year since 1976.

The average cost of natural gas to electric utilities increased significantly during 1981 to $2.91 per thousand cubic feet (Mcf). This cost is 27.6 percent higher than in 1980 when utilities paid $2.28 per Mcf. In comparing the cost of natural gas to other fossil fuels, gas cost 281.9 cents per million Btu in 1981, roughly double the cost of coal and about half that of oil, based on the same heating value.

During 1981, interruptible supplies of natural gas cost more than firm supplies. Interruptible supplies cost an average of 351.8 cents per million Btu (an increase of 22.9 percent from 1980) compared to firm supplies that cost only 237.6 cents (an increase of 30.8 percent from 1980). In the contiguous United States, the Middle Atlantic Census Region showed the highest annual increase in the cost of natural gas (31.5 percent) while the New England Census Region recorded the lowest annual increase (9.7 percent). The cost of natural gas (per million Btu) has risen an average of 22.2 percent per year since 1976.

Table 103 below shows the cost in dollars of coal, oil, and natural gas to utilities for the period 1976-1981.

Table 103. Cost of Fossil Fuel Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, in the Contiguous United States, 1976-1981

(Dollars)

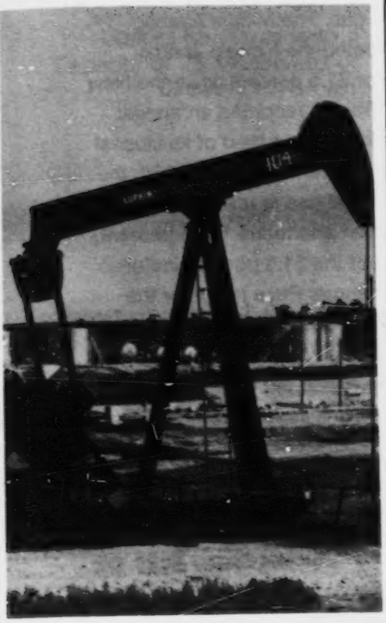
Year	Cost of Coal Per Short Ton	Percent Change from Previous Year	Cost of Oil Per Barrel	Percent Change from Previous Year	Cost of Gas Per Mcf	Percent Change from Previous Year
1981 ...	32.31	12.3	33.47	23.8	2.91	27.6
1980 ...	28.76	10.0	27.04	42.1	2.28	26.0
1979 ...	26.15	10.1	19.03	41.5	1.81	22.3
1978 ...	23.75	16.6	13.45	-2.7	1.48	11.3
1977 ...	20.37	10.8	13.82	12.8	1.33	25.5
1976 ...	18.38	-	12.25	-	1.06	-

Source: Federal Power Commission Form 423.

Cost of Coal By Census Region

The cost of coal increased 13.4 percent to 153.2 cents per million Btu in 1981 for utilities with a total installed nameplate capacity of 25 Megawatts or greater, located in the contiguous United States. Quantitatively, the New England Region reported the highest average cost of coal in 1981, 213.5 cents per million Btu. The South Atlantic Region recorded the second highest cost of 174.7 cents. The Mountain Region, where a large amount of coal is mined, reported the lowest cost, only 89.4 cents per million Btu. The highest annual increase from 1980 to 1981 was also reported by the New England Region (23.5 percent) while the West North Central Region recorded the lowest annual increase (9.3 percent).

Fuel Costs (continued)



Since 1976, the cost of coal has increased 80.7 percent. During this period, the West South Central Region has experienced the highest increase (298.7 percent) while the Middle Atlantic Region reported the lowest increase (56.9 percent).

Table 104. Average Cost of Coal at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region in 1981 (Cents Per Million Btu)

Census Region	Cost of Coal in 1981	Percent Change from 1980	Percent Difference from 1976
New England	213.5	23.5	70.4
Middle Atlantic	160.7	17.1	56.9
East North Central	166.4	13.4	90.2
West North Central	120.2	9.3	82.4
South Atlantic	174.7	14.1	71.3
East South Central	170.4	13.4	98.8
West South Central	149.5	19.8	298.7
Mountain	89.4	12.3	149.7
Pacific Contiguous	121.0	15.9	60.9
Average	**153.2**	**13.4**	**80.7**

Source: Federal Power Commission Form 423.

Cost of Oil by Census Region

Electric utilities collectively reduced their consumption of oil during 1981. The average cost of oil per million Btu paid by utilities increased 23.4 percent from 1980 to 538.7 cents per million Btu in 1981. Among Census Regions, there was a wide disparity in the cost of oil to utilities. The East North Central Region reported a cost of 682.0 cents per million Btu in 1981 while the East South Central Region reported a cost of only 460.0 cents. There was also a wide range of annual increases reported among the Census Regions. The Mountain Region recorded a 45.7 percent increase from 1980 while the Middle Atlantic Region recorded an 18.7 percent increase. Since 1976, the cost of oil to utilities has increased a dramatic 169.6 percent. Increases since 1976 range from 235.8 percent in the West North Central Region to 142.9 percent in the East South Central Region.

Table 105. Average Cost of Oil at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region in 1981 (Cents Per Million Btu)

Census Region	Cost of Oil in 1981	Percent Change from 1980	Percent Difference from 1976
New England	499.9	21.5	171.2
Middle Atlantic	529.3	18.7	168.3
East North Central	682.0	34.1	201.0
West North Central	622.3	23.8	235.8
South Atlantic	493.0	25.1	166.1
East South Central	460.0	30.2	142.9
West South Central	479.9	30.5	159.3
Mountain	625.1	45.7	175.1
Pacific Contiguous	664.1	31.3	183.8
Average	**538.7**	**23.4**	**169.6**

Source: Federal Power Commission Form 423.

Fuel Costs (continued)

Cost of Gas by Census Region

Of all the fossil fuels, the cost of natural gas increased the most from 1980 to 1981, 27.6 percent. Utilities, which reduced their consumption of natural gas during 1981 from the year before, nevertheless saw natural gas costs rise to an average of 281.9 cents per million Btu. The cost of natural gas during 1981 ranged from a high of 399.2 cents per million Btu in the Pacific Contiguous Region to a low of 203.7 cents in the South Atlantic Region. Interestingly, two adjacent regions recorded the highest and lowest annual increases in the cost of natural gas. The Middle Atlantic Region posted the highest annual increase of 31.5 percent while the New England Region recorded an annual increase less than a third of its closest neighbor, 9.7 percent. Since 1976, the cost of natural gas to utilities has increased an enormous 172.6 percent, far ahead of the 61.5 percent increase in the Consumer Price Index for the same period. Between 1976 and 1981, the cost of natural gas in the Mountain Region increased the most (200.8 percent) while it increased the least in the East South Central Region (100.5).

Table 106. Average Cost of Gas at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Census Region in 1981

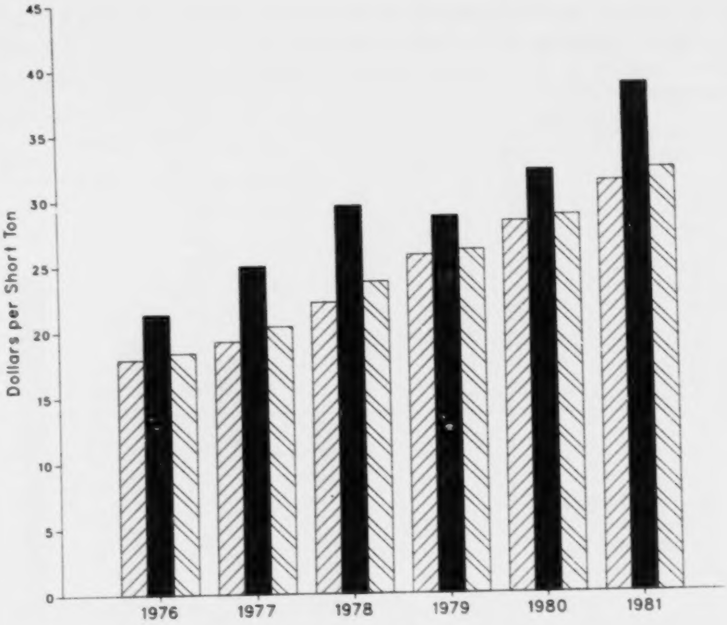
(Cents Per Million Btu)

Census Region	Cost of Gas in 1981	Percent Change from 1980	Percent Difference from 1976
New England	377.1	9.7	145.0
Middle Atlantic	369.6	31.5	199.0
East North Central	361.6	22.6	148.0
West North Central	228.6	22.1	199.2
South Atlantic	203.7	19.3	143.1
East South Central	261.7	23.4	100.5
West South Central	243.8	30.7	150.3
Mountain	289.7	14.5	200.8
Pacific Contiguous	399.2	13.1	156.4
Average	**281.9**	**27.6**	**172.6**

Source: Federal Power Commission Form 423.

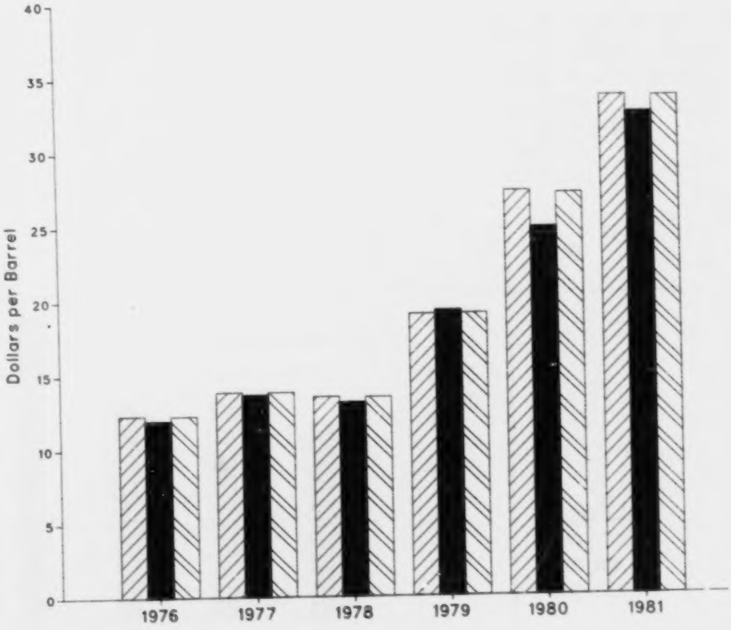
Fuel Costs (continued)

Figure 17. Cost of Coal at Utilities for Plants with a Capacity of 25 Megawatts or Greater, 1976-1981



Source: Federal Power Commission Form 423.

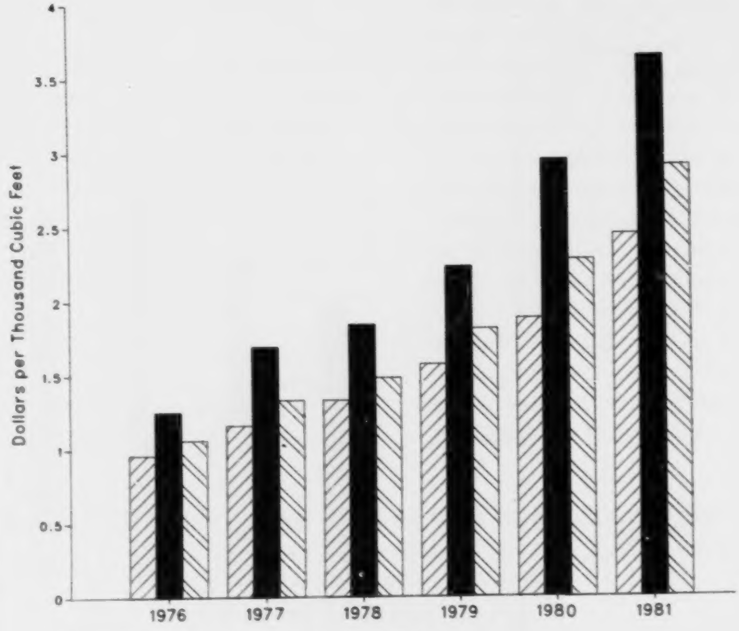
Figure 18. Cost of Oil at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, 1976-1981



Source: Federal Power Commission Form 423.

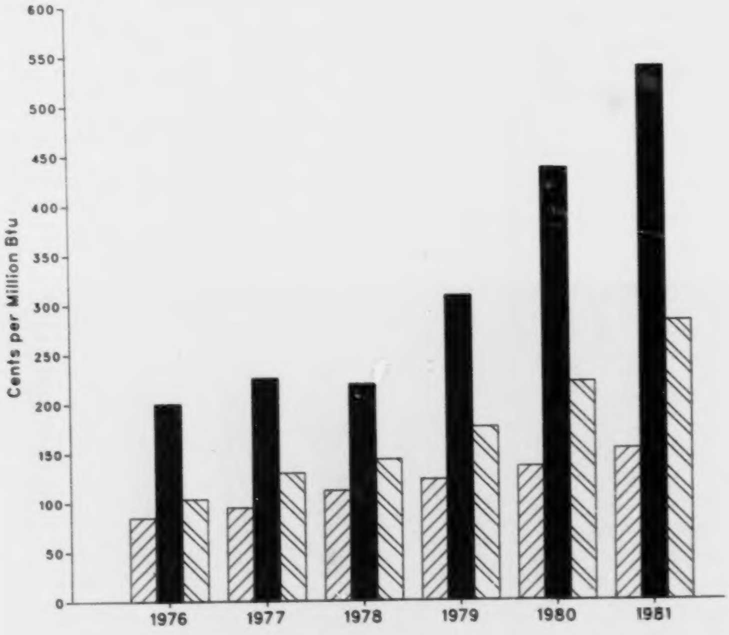
Fuel Costs (continued)

Figure 19. Cost of Gas at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, 1976-1981



Source: Federal Power Commission Form 423.

Figure 20. Cost of Coal, Oil and Gas at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, 1976-1981



Source: Federal Power Commission Form 423.

Fuel Costs (continued)

Table 107. Cost of Fossil Fuel Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, in the Contiguous United States, 1976-1981

(Cents Per Million Btu)

Cost	1981	1980	1979	1978	1977	1976
Total Coal	**153**	**135**	**122**	**112**	**95**	**85**
Contract	151	135	122	107	91	84
Spot	164	137	124	129	108	92
Total Oil	**539**	**437**	**308**	**219**	**226**	**200**
Contract	540	440	308	220	226	200
Spot	524	400	313	215	224	197
Total Gas	**282**	**221**	**175**	**143**	**129**	**103**
Firm	238	182	151	128	112	94
Interruptible[1]	352	286	217	179	164	123

[1] Includes Off Peak Gas.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 108. Cost of Fossil Fuel Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, in the Contiguous United States, 1976-1981

(Dollars)

Cost	1981	1980	1979	1978	1977	1976
Total Coal(per short ton)	**32.31**	**28.76**	**26.15**	**23.75**	**20.37**	**18.38**
Contract	31.34	28.31	25.77	22.19	19.25	17.90
Spot	38.80	32.21	28.72	29.56	24.99	21.33
Total Oil(per barrel)	**33.47**	**27.04**	**19.03**	**13.45**	**13.82**	**12.25**
Contract	33.54	27.23	19.01	13.50	13.84	12.28
Spot	32.41	24.77	19.26	13.12	13.66	11.94
Total Gas(per Mcf)	**2.91**	**2.28**	**1.81**	**1.48**	**1.33**	**1.06**
Firm	2.45	1.88	1.57	1.33	1.16	.96
Interruptible[1]	3.65	2.95	2.23	1.84	1.69	1.25

[1] Includes Off Peak Gas.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Fuel Costs (continued)

Table 109. Cost of Coal Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1981

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Tons	¢ per 10⁶ Btu	$ per Ton	Quantity 1000 Tons	¢ per 10⁶ Btu	$ per Ton	Quantity 1000 Tons	¢ per 10⁶ Btu	$ per Ton
New England	**1,655**	**206**	**54.81**	**368**	**246**	**64.08**	**2,022**	**214**	**56.4**
Connecticut	-	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
Massachusetts	797	245	64.05	346	248	64.66	1,143	246	64.23
New Hampshire	858	172	46.23	-	-	-	858	172	46.23
Rhode Island	-	-	-	-	-	-	-	-	-
Vermont	-	-	-	21	217	54.56	21	217	54.5
Middle Atlantic	**32,636**	**163**	**39.58**	**16,308**	**156**	**37.71**	**48,944**	**161**	**38.9**
New Jersey	2,235	206	53.87	471	212	55.90	2,706	207	54.22
New York	3,370	176	43.72	3,220	165	39.63	6,590	171	41.72
Pennsylvania	27,031	158	37.88	12,617	151	36.54	39,648	156	37.45
East North Central	**118,994**	**169**	**35.51**	**23,623**	**155**	**36.34**	**142,617**	**166**	**36.4**
Illinois	29,687	189	39.16	2,020	141	30.86	31,708	186	38.6
Indiana	25,169	151	32.56	4,214	127	28.10	29,383	147	31.9
Michigan	18,083	171	39.57	4,859	186	46.33	22,941	175	41.0
Ohio	33,833	168	37.75	11,616	154	36.13	45,449	164	37.3
Wisconsin	12,222	154	30.21	914	161	35.90	13,135	155	30.6
West North Central	**72,580**	**119**	**21.18**	**3,086**	**138**	**29.35**	**75,665**	**120**	**21.5**
Iowa	9,856	149	26.94	501	153	33.23	10,357	149	27.2
Kansas	11,046	118	21.44	20	155	36.36	11,066	118	21.4
Minnesota	11,530	114	19.88	277	118	22.01	11,806	114	19.9
Missouri	20,162	135	28.48	1,657	134	29.07	21,819	135	28.5
Nebraska	4,270	109	19.22	631	144	29.99	4,901	114	20.6
North Dakota	13,084	68	9.02	-	-	-	13,084	68	9.0
South Dakota	2,632	94	11.90	-	-	-	2,632	94	11.9
South Atlantic	**85,122**	**173**	**41.84**	**20,938**	**183**	**44.58**	**106,060**	**175**	**42.**
Delaware	818	208	51.63	710	198	43.66	1,528	203	50.7
District of Columbia	-	-	-	-		-	-	-	
Florida	8,283	207	49.32	1,769	170	40.97	10,053	201	47.8
Georgia	18,096	169	40.19	3,238	184	44.66	21,334	171	40.8
Maryland	3,123	179	43.90	1,791	185	45.14	4,914	181	44.
North Carolina	20,616	172	42.03	4,123	180	43.49	24,739	173	42.2
South Carolina	5,381	176	43.83	3,178	187	45.16	8,560	180	44.
Virginia	2,613	181	43.66	3,710	201	50.80	6,323	193	47.
West Virginia	26,191	162	39.32	2,419	155	36.72	28,610	162	39.
East South Central	**54,508**	**172**	**40.00**	**8,561**	**162**	**38.54**	**63,069**	**170**	**39.**
Alabama	14,428	190	45.44	3,914	184	44.59	18,342	189	45.
Kentucky	21,050	149	33.87	3,849	138	32.33	24,899	147	33.
Mississippi	2,514	240	57.79	477	168	40.43	2,991	228	55.
Tennessee	16,516	174	40.36	321	158	36.45	16,838	173	40.
West South Central	**68,678**	**150**	**23.30**	**718**	**103**	**11.68**	**69,395**	**150**	**23.**
Arkansas	5,861	155	26.25	-	-	-	5,861	155	26.
Louisiana	3,200	213	34.40	-	-	-	3,200	213	34.
Oklahoma	9,266	145	24.87	-	-	-	9,266	145	24.
Texas	50,350	146	21.96	718	103	11.68	51,068	145	21.
Mountain	**63,692**	**86**	**16.64**	**2,344**	**181**	**37.45**	**66,036**	**89**	**17.**
Arizona	12,367	96	20.18	1,030	221	43.90	13,397	105	22
Colorado	10,641	96	19.39	-	-	-	10,641	96	19
Idaho	-	-	-	-	-	-	-	-	
Montana	3,339	51	8.77	-	-	-	3,339	51	8
Nevada	4,220	96	20.99	893	172	39.60	5,113	110	24
New Mexico	11,170	70	12.78	-	-	-	11,170	70	12
Utah	4,736	125	28.69	90	180	44.95	4,826	127	28
Wyoming	17,220	69	12.05	331	61	9.58	17,551	69	12
Pacific	**5,564**	**121**	**19.70**	-	-	-	**5,564**	**121**	**19**
California	-	-	-	-	-	-	-	-	
Oregon	1,164	159	26.29	-	-	-	1,164	159	26
Washington	4,400	111	17.96	-	-	-	4,400	111	17
Total	**503,428**	**151**	**31.34**	**75,946**	**164**	**38.80**	**579,374**	**153**	**32**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 109. Cost of Coal Receipts at Electric Utilities for a Plant with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1980 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton
New England	**952**	**160**	**42.89**	**733**	**190**	**50.77**	**1,686**	**173**	**46.32**
Connecticut	-	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	633	195	52.06	633	195	52.06
New Hampshire	952	160	42.89	100	163	42.58	1,052	160	42.86
Rhode Island	-	-	-	-	-	-	-	-	-
Vermont	-	-	-	-	-	-	-	-	-
Middle Atlantic	**38,210**	**140**	**34.03**	**12,958**	**128**	**31.38**	**51,167**	**137**	**33.36**
New Jersey	2,191	179	46.80	334	189	49.83	2,526	180	47.20
New York	3,625	152	37.52	2,743	141	34.60	6,368	147	36.26
Pennsylvania	32,393	136	32.78	9,800	123	29.86	42,273	133	32.10
East North Central	**136,620**	**149**	**32.35**	**23,509**	**136**	**32.03**	**160,130**	**147**	**32.30**
Illinois	33,643	164	33.73	2,245	124	26.62	35,888	162	33.29
Indiana	32,860	129	27.76	3,957	109	24.04	36,817	126	27.36
Michigan	18,128	155	36.88	4,017	162	40.69	22,145	156	37.57
Ohio	38,314	152	34.20	12,452	137	32.65	50,766	148	33.82
Wisconsin	13,676	141	28.81	839	148	33.57	14,514	142	29.09
West North Central	**71,354**	**109**	**19.92**	**6,142**	**115**	**21.52**	**77,496**	**110**	**20.05**
Iowa	9,942	138	25.49	765	142	30.59	10,707	139	25.85
Kansas	9,961	106	19.35	281	126	31.23	10,242	107	19.68
Minnesota	12,153	104	18.20	81	163	35.64	12,233	104	18.31
Missouri	23,147	118	25.01	1,665	133	29.53	24,812	119	25.32
Nebraska	3,335	120	22.23	1,275	135	26.29	4,610	124	23.36
North Dakota	10,140	56	7.44	2,075	53	6.96	12,215	56	7.36
South Dakota	2,677	76	9.61	-	-	-	2,677	76	9.61
South Atlantic	**89,511**	**153**	**37.22**	**14,878**	**151**	**37.19**	**104,388**	**153**	**37.22**
Delaware	562	173	43.52	521	154	37.98	1,083	164	40.86
District of Columbia	-	-	-	-	-	-	-	-	-
Florida	7,826	182	43.04	858	159	38.94	8,684	180	42.64
Georgia	18,033	149	35.21	3,273	157	38.46	21,307	150	35.71
Maryland	4,495	155	38.36	1,507	152	37.28	6,002	154	38.09
North Carolina	20,174	159	39.02	3,260	144	34.98	23,434	157	38.46
South Carolina	5,813	159	39.63	2,283	148	36.29	8,096	156	38.69
Virginia	3,359	172	42.19	1,843	171	44.06	5,202	171	42.85
West Virginia	29,249	141	34.32	1,331	123	30.02	30,580	141	34.13
East South Central	**62,358**	**152**	**35.51**	**7,972**	**133**	**31.70**	**70,330**	**150**	**35.08**
Alabama	16,181	166	39.46	3,657	142	34.51	19,838	161	38.55
Kentucky	21,376	133	30.33	3,520	119	27.76	24,896	131	29.97
Mississippi	2,964	192	46.16	788	153	36.30	3,751	184	44.09
Tennessee	21,837	156	36.22	6	135	32.07	21,843	156	36.21
West South Central	**59,999**	**125**	**19.09**	-	-	-	**59,999**	**125**	**19.09**
Arkansas	3,275	134	22.72	-	-	-	3,275	134	22.72
Louisiana	2,068	196	31.36	-	-	-	2,068	196	31.36
Oklahoma	7,883	123	21.46	-	-	-	7,883	123	21.46
Texas	46,773	121	17.90	-	-	-	46,773	121	17.90
Mountain	**60,690**	**77**	**14.94**	**2,240**	**150**	**30.80**	**62,930**	**80**	**15.51**
Arizona	11,686	92	19.65	785	189	36.84	12,471	98	20.73
Colorado	11,018	85	17.03	188	105	21.93	11,206	85	17.11
Idaho	-	-	-	-	-	-	-	-	-
Montana	3,364	44	7.54	-	-	-	3,364	44	7.54
Nevada	3,573	91	19.87	942	155	35.71	4,515	105	23.17
New Mexico	11,603	56	9.86	19	129	21.95	11,622	56	9.88
Utah	5,198	114	26.06	-	-	-	5,198	114	26.06
Wyoming	14,248	57	10.07	306	41	6.19	14,554	57	9.99
Pacific	**5,870**	**104**	**16.96**	-	-	-	**5,870**	**104**	**16.96**
California	-	-	-	-	-	-	-	-	-
Oregon	1,070	141	23.15	-	-	-	1,070	141	23.15
Washington	4,800	96	15.58	-	-	-	4,800	96	15.58
Total	**525,564**	**135**	**28.31**	**68,431**	**137**	**32.21**	**593,995**	**135**	**28.76**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 109. Cost of Coal Receipts at Electric Utilities for a Plant with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1979 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton
New England	**1,024**	**153**	**41.06**	**41**	**157**	**40.77**	**1,065**	**153**	**41.04**
Connecticut	–	–	–	–	–	–	–	–	–
Maine	–	–	–	–	–	–	–	–	–
Massachusetts	2	233	62.78	–	–	–	2	233	62.78
New Hampshire	1,022	153	41.01	28	147	38.41	1,050	152	40.94
Rhode Island	–	–	–	–	–	–	–	–	–
Vermont	–	–	–	13	177	45.95	13	177	45.95
Middle Atlantic	**35,200**	**128**	**30.88**	**14,347**	**117**	**28.45**	**49,547**	**125**	**30.17**
New Jersey	2,212	167	43.53	70	176	46.47	2,282	167	43.62
New York	3,658	140	34.12	2,575	132	32.46	6,233	136	33.43
Pennsylvania	29,329	123	29.52	11,703	113	27.48	41,032	120	28.93
East North Central	**135,695**	**135**	**29.20**	**28,687**	**125**	**28.82**	**164,382**	**133**	**29.13**
Illinois	31,458	148	29.99	5,092	132	29.16	36,550	145	29.88
Indiana	32,223	119	25.61	4,699	101	22.53	36,922	116	25.22
Michigan	20,462	145	33.91	3,801	151	38.01	24,264	146	34.55
Ohio	39,632	137	29.95	13,745	122	28.31	53,377	133	29.52
Wisconsin	11,919	126	26.20	1,350	134	28.67	13,269	127	26.45
West North Central	**66,437**	**100**	**18.40**	**6,718**	**112**	**20.87**	**73,155**	**101**	**18.62**
Iowa	10,915	121	22.52	931	139	29.85	11,846	122	23.09
Kansas	8,452	97	17.71	587	129	30.38	9,039	99	18.53
Minnesota	12,819	100	17.68	143	154	32.63	12,962	101	17.84
Missouri	21,789	104	22.18	993	143	34.66	22,782	106	22.72
Nebraska	2,927	97	17.57	1,260	140	30.31	4,187	112	21.41
North Dakota	6,798	47	6.29	2,804	47	6.16	9,602	47	6.25
South Dakota	2,737	66	8.30	–	–	–	2,737	66	8.30
South Atlantic	**82,527**	**142**	**34.10**	**11,738**	**139**	**33.74**	**94,265**	**141**	**34.06**
Delaware	461	138	34.01	550	133	33.00	1,011	135	33.46
District of Columbia	–	–	–	–	–	–	–	–	–
Florida	7,286	163	38.75	664	147	35.00	7,950	162	38.43
Georgia	15,861	137	32.32	3,351	144	35.00	19,212	138	32.78
Maryland	4,011	146	36.01	1,431	137	33.52	5,442	144	35.36
North Carolina	19,111	147	35.89	1,923	130	31.28	21,033	146	35.47
South Carolina	5,687	146	36.27	687	138	33.78	6,375	146	36.00
Virginia	3,885	170	41.53	1,520	162	41.57	5,405	168	41.54
West Virginia	26,225	128	30.73	1,612	114	26.60	27,837	128	30.48
East South Central	**64,069**	**135**	**30.91**	**8,382**	**121**	**28.34**	**72,451**	**133**	**30.61**
Alabama	15,353	153	36.23	3,220	130	31.41	18,572	149	35.39
Kentucky	21,845	114	25.55	3,785	112	25.82	25,631	114	25.59
Mississippi	2,270	172	40.30	483	143	33.34	2,753	167	39.08
Tennessee	24,601	137	31.47	894	108	25.22	25,495	136	31.25
West South Central	**41,085**	**101**	**14.92**	**42**	**175**	**38.22**	**41,127**	**101**	**14.84**
Arkansas	1,557	114	19.11	–	–	–	1,557	114	19.11
Louisiana	–	–	–	–	–	–	–	–	–
Oklahoma	4,367	115	20.02	–	–	–	4,367	115	20.02
Texas	35,161	98	14.10	42	175	38.22	35,202	98	14.13
Mountain	**54,273**	**67**	**13.17**	**1,492**	**138**	**26.89**	**55,765**	**69**	**13.54**
Arizona	11,229	72	15.33	950	165	32.54	12,179	79	16.67
Colorado	9,385	75	15.18	–	–	–	9,385	75	15.18
Idaho	–	–	–	–	–	–	–	–	–
Montana	3,511	36	6.14	–	–	–	3,511	36	6.14
Nevada	4,110	104	22.87	232	141	32.61	4,342	106	23.39
New Mexico	8,676	48	8.51	–	–	–	8,676	48	8.51
Utah	4,246	103	24.06	–	–	–	4,246	103	24.06
Wyoming	13,115	47	8.28	310	34	5.29	13,425	47	8.21
Pacific	**4,800**	**84**	**13.55**	**1**	**173**	**34.67**	**4,801**	**84**	**13.55**
California	–	–	–	–	–	–	–	–	–
Oregon	–	–	–	1	173	34.67	1	173	34.67
Washington	4,800	84	13.55	–	–	–	4,800	84	13.55
Total	**485,109**	**122**	**25.77**	**71,449**	**124**	**28.72**	**556,558**	**122**	**26.15**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Fuel Costs (continued)

Table 109. Cost of Coal Receipts at Electric Utilities for a Plant with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1978 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton
New England	**565**	**147**	**38.56**	**195**	**150**	**37.97**	**760**	**148**	**38.41**
Connecticut	–	–	–	–	–	–	–	–	–
Maine	–	–	–	–	–	–	–	–	–
Massachusetts	–	–	–	–	–	–	–	–	–
New Hampshire	565	147	38.56	195	150	37.97	760	148	38.41
Rhode Island	–	–	–	–	–	–	–	–	–
Vermont	–	–	–	–	–	–	–	–	–
Middle Atlantic	**27,749**	**124**	**29.92**	**13,855**	**113**	**27.10**	**41,605**	**120**	**28.98**
New Jersey	1,931	156	40.66	74	169	45.05	2,005	156	40.82
New York	3,253	132	31.69	2,703	127	30.38	5,956	129	31.10
Pennsylvania	22,566	120	28.75	11,078	110	26.18	33,644	116	27.90
East North Central	**104,518**	**120**	**25.57**	**37,545**	**125**	**27.87**	**142,064**	**122**	**26.18**
Illinois	25,723	122	24.58	7,306	137	29.86	33,030	125	25.75
Indiana	22,869	109	23.29	7,665	116	24.82	30,535	111	23.68
Michigan	14,912	124	28.20	5,235	142	34.05	20,147	129	29.72
Ohio	30,567	128	27.55	15,967	117	26.43	46,534	124	27.17
Wisconsin	10,447	112	23.44	1,371	130	27.43	11,818	114	23.90
West North Central	**57,084**	**85**	**15.53**	**6,234**	**139**	**30.34**	**63,318**	**92**	**16.99**
Iowa	7,447	115	22.29	1,323	137	29.31	8,770	118	23.35
Kansas	7,407	87	15.50	687	112	26.17	8,094	90	16.40
Minnesota	11,396	80	13.89	146	138	28.88	11,542	81	14.08
Missouri	17,718	82	19.69	2,901	152	33.26	20,619	100	21.60
Nebraska	1,554	100	19.78	1,174	125	26.95	2,728	111	22.87
North Dakota	8,471	39	5.25	3	152	24.38	8.474	39	5.26
South Dakota	3,091	61	7.57	–	–	–	3,091	61	7.57
South Atlantic	**63,264**	**129**	**30.84**	**22,301**	**138**	**32.71**	**85,565**	**132**	**31.33**
Delaware	204	130	32.25	559	130	31.74	763	130	31.88
District of Columbia	–	–	–	–	–	–	–	–	–
Florida	5,723	149	35.21	1,586	139	32.54	7,309	147	34.63
Georgia	12,556	118	27.94	4,462	145	34.65	17,018	125	29.70
Maryland	2,720	137	33.30	1,754	133	32.61	4,474	135	33.03
North Carolina	13,335	137	33.13	5,951	141	33.62	19,285	138	33.28
South Carolina	4,043	138	33.68	2,620	139	33.09	6,663	138	33.45
Virginia	3,091	156	37.60	955	164	41.39	4,046	158	38.64
West Virginia	21,592	119	28.10	4,414	119	27.67	26,006	119	28.03
East South Central	**44,172**	**115**	**25.98**	**20,540**	**133**	**30.56**	**64,712**	**121**	**27.43**
Alabama	11,916	131	30.61	5,727	139	33.33	17,643	133	31.49
Kentucky	15,234	99	21.82	8,909	129	28.77	24,143	111	24.39
Mississippi	1,065	138	32.22	639	153	37.13	1,703	144	34.06
Tennessee	15,957	116	26.08	5,266	130	29.74	21,223	120	26.99
West South Central	**27,941**	**73**	**10.63**	**–**	**–**	**–**	**27,941**	**73**	**10.63**
Arkansas	1,471	101	16.88	–	–	–	1,471	101	16.88
Louisiana	–	–	–	–	–	–	–	–	–
Oklahoma	2,065	106	18.19	–	–	–	2,065	106	18.19
Texas	24,405	68	9.61	–	–	–	24,405	68	9.61
Mountain	**45,073**	**52**	**10.14**	**331**	**144**	**29.40**	**45,403**	**53**	**10.28**
Arizona	7,430	44	9.53	331	144	29.40	7,760	48	10.37
Colorado	8,553	66	13.27	–	–	–	8,553	66	13.27
Idaho	–	–	–	–	–	–	–	–	–
Montana	3,331	32	5.48	–	–	–	3,331	32	5.48
Nevada	3,695	79	17.34	–	–	–	3,695	79	17.34
New Mexico	8,289	42	7.59	–	–	–	8,289	42	7.59
Utah	2,754	85	19.81	–	–	–	2,754	85	19.81
Wyoming	11,022	38	6.63	–	–	–	11,022	38	6.63
Pacific	**4,800**	**77**	**12.49**	**–**	**–**	**–**	**4,800**	**77**	**12.49**
California	–	–	–	–	–	–	–	–	–
Oregon	–	–	–	–	–	–	–	–	–
Washington	4,800	77	12.49	–	–	–	4,800	77	12.49
Total	**375,167**	**107**	**22.19**	**101,001**	**129**	**29.56**	**476,168**	**112**	**23.75**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Fuel Costs (continued)

Table 109. Cost of Coal Receipts at Electric Utilities for a Plant with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1977 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Tons	¢ per 10⁶ Btu	$ per Ton	Quantity 1000 Tons	¢ per 10⁶ Btu	$ per Ton	Quantity 1000 Tons	¢ per 10⁶ Btu	$ per Ton
New England	**928**	**130**	**34.77**	**52**	**132**	**34.97**	**980**	**130**	**34.7**
Connecticut	-	-	-	-	-	-	-	-	
Maine	-	-	-	-	-	-	-	-	
Massachusetts	-	-	-	-	-	-	-	-	
New Hampshire	928	130	34.77	32	129	34.71	960	130	34.7
Rhode Island	-	-	-	-	-	-	-	-	
Vermont	-	-	-	20	138	35.39	20	138	35.3
Middle Atlantic	**33,317**	**109**	**26.37**	**13,820**	**98**	**23.25**	**47,137**	**106**	**25.4**
New Jersey	2,561	141	36.61	136	157	41.06	2,597	142	36.8
New York	3,645	120	29.04	2,817	113	27.63	6,462	117	28.4
Pennsylvania	27,110	104	25.04	10,868	93	21.90	37,978	101	24.1
East North Central	**118,350**	**97**	**20.85**	**31,719**	**101**	**22.64**	**150,069**	**98**	**21.2**
Illinois	26,290	100	20.23	5,553	114	25.14	31,844	102	21.0
Indiana	27,623	79	16.95	5,510	88	19.44	33,133	81	17.3
Michigan	18,283	107	25.29	3,036	123	29.17	21,319	110	25.8
Ohio	36,291	103	22.26	16,765	97	21.49	53,055	101	22.0
Wisconsin	9,863	95	20.04	854	120	26.53	10,718	97	20.5
West North Central	**53,804**	**73**	**13.69**	**4,591**	**111**	**25.26**	**58,395**	**77**	**14.6**
Iowa	7,167	101	20.15	509	122	25.23	7,675	102	20.4
Kansas	5,490	73	13.48	670	88	20.73	6,160	75	14.2
Minnesota	11,814	74	12.93	103	106	20.39	11,917	74	12.9
Missouri	19,180	71	15.23	2,174	115	26.74	21,354	75	16.4
Nebraska	1,197	94	19.39	1,118	116	25.61	2,315	105	22.3
North Dakota	6,508	39	5.12	-	-	-	6,508	39	5.1
South Dakota	2,448	55	6.87	18	123	23.00	2,466	55	6.8
South Atlantic	**66,134**	**113**	**26.77**	**28,011**	**122**	**28.82**	**94,145**	**116**	**27.3**
Delaware	315	105	25.40	389	113	27.22	704	109	26.4
District of Columbia	-	-	-	-	-	-	-	-	
Florida	6,655	127	29.32	360	131	30.45	7,015	127	29.3
Georgia	11,180	102	24.17	6,913	122	29.02	18,093	110	26.0
Maryland	3,856	123	29.96	1,300	111	27.09	5,156	120	29.2
North Carolina	14,401	121	28.95	7,455	130	30.93	21,856	124	29.0
South Carolina	3,723	118	28.21	3,573	131	31.11	7,296	124	29.0
Virginia	3,763	131	31.60	1,754	147	36.39	5,517	136	33.1
West Virginia	22,241	104	24.32	6,267	101	23.04	28,508	103	24.0
East South Central	**51,108**	**97**	**21.44**	**15,105**	**108**	**24.86**	**66,213**	**99**	**22.**
Alabama	12,377	113	26.06	5,885	113	26.57	18,262	113	26.
Kentucky	18,912	78	17.01	6,911	102	23.32	25,822	85	18.
Mississippi	1,066	96	21.84	635	130	29.96	1,702	109	24.
Tennessee	18,753	103	22.84	1,674	103	23.31	20,428	103	22.
West South Central	**21,012**	**63**	**9.09**	-	-	-	**21,012**	**63**	**9.**
Arkansas	-	-	-	-	-	-	-	-	
Louisiana	-	-	-	-	-	-	-	-	
Oklahoma	1,920	108	18.07	-	-	-	1,920	108	18.
Texas	19,093	58	8.19	-	-	-	19,093	58	8.
Mountain	**45,984**	**43**	**8.33**	**1,928**	**98**	**20.69**	**47,912**	**45**	**8.**
Arizona	6,566	31	6.73	1,589	107	23.65	8,155	47	10.
Colorado	8,235	60	12.19	80	84	19.31	8,315	61	12.
Idaho	-	-	-	-	-	-	-	-	
Montana	3,223	28	4.81	-	-	-	3,223	28	4.
Nevada	5,396	55	12.09	-	-	-	5,396	55	12.
New Mexico	9,122	29	5.27	-	-	-	9,122	29	5.
Utah	2,419	74	17.18	-	-	-	2,419	74	17.
Wyoming	11,022	35	6.18	259	19	2.94	11,281	35	6.
Pacific	**4,550**	**72**	**11.72**	-	-	-	**4,550**	**72**	**11.**
California	-	-	-	-	-	-	-	-	
Oregon	-	-	-	-	-	-	-	-	
Washington	4,550	72	11.72	-	-	-	4,550	72	11.
Total	**395,187**	**91**	**19.25**	**95,227**	**108**	**24.29**	**490,415**	**95**	**20.**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 109. Cost of Coal Receipts at Electric Utilities for a Plant with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1976 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton	Quantity 1000 Tons	¢ per 10^6 Btu	$ per Ton
New England	**736**	**125**	**33.77**	**18**	**123**	**32.44**	**753**	**125**	**33.74**
Connecticut	–	–	–	–	–	–	–	–	–
Maine	–	–	–	–	–	–	–	–	–
Massachusetts	–	–	–	–	–	–	–	–	–
New Hampshire	736	125	33.77	18	123	32.44	753	125	33.74
Rhode Island	–	–	–	–	–	–	–	–	–
Vermont	–	–	–	–	–	–	–	–	–
Middle Atlantic	**33,468**	**105**	**25.47**	**12,215**	**95**	**22.77**	**45,683**	**102**	**24.75**
New Jersey	2,419	144	37.69	114	158	42.50	2,533	145	37.91
New York	3,904	115	28.19	1,834	108	26.43	5,738	113	27.63
Pennsylvania	27,145	100	23.99	10,267	91	21.90	37,412	98	23.41
East North Central	**121,955**	**87**	**18.76**	**25,886**	**90**	**20.29**	**147,840**	**88**	**19.03**
Illinois	30,672	84	17.06	4,119	90	19.75	34,791	85	17.38
Indiana	25,590	66	14.23	4,889	73	16.01	30,479	68	14.52
Michigan	18,202	99	23.43	3,106	112	27.45	21,308	101	24.02
Ohio	36,768	96	21.00	13,345	90	20.18	50,113	94	20.78
Wisconsin	10,723	88	18.79	426	113	26.03	11 149	89	19.07
West North Central	**48,972**	**63**	**11.89**	**3,645**	**96**	**21.34**	**52,617**	**66**	**12.55**
Iowa	6,314	87	17.62	393	123	24.98	6,707	89	18.05
Kansas	2,807	70	13.73	626	89	21.45	3,432	74	15.13
Minnesota	10,292	68	12.11	213	89	17.43	10,505	69	12.22
Missouri	18,868	60	12.89	1,688	91	20.89	20,556	62	13.54
Nebraska	1,164	88	18.32	688	102	21.30	1,852	93	19.43
North Dakota	6,885	29	3.84	–	–	–	6,885	29	3.84
South Dakota	2,642	51	6.45	37	119	24.90	2,679	53	6.70
South Atlantic	**73,283**	**103**	**24.52**	**12,105**	**96**	**23.12**	**85,388**	**102**	**24.32**
Delaware	307	104	25.99	458	101	25.06	765	102	25.43
District of Columbia	–	–	–	–	–	–	–	–	–
Florida	6,454	110	25.51	486	109	25.71	6,940	110	25.52
Georgia	12,883	97	22.95	1,720	103	24.98	14,603	98	23.19
Maryland	3,241	118	29.17	1,327	106	25.74	4,569	115	28.18
North Carolina	17,670	113	27.19	1,917	87	20.71	19,587	110	26.56
South Carolina	4,043	108	26.23	1,452	92	22.40	5,495	104	25.22
Virginia	4,119	115	28.15	1,190	108	26.80	5,309	114	27.84
West Virginia	24,566	92	21.63	3,555	89	21.00	28,120	92	21.55
East South Central	**56,441**	**86**	**19.08**	**9,656**	**86**	**20.04**	**66,097**	**86**	**19.22**
Alabama	14,396	103	23.64	3,698	92	21.71	18,094	100	23.24
Kentucky	22,383	67	14.60	3,011	78	17.91	25,394	68	14.99
Mississippi	669	86	20.17	908	115	26.58	1,577	102	23.86
Tennessee	18,994	93	20.86	2,038	74	17.28	21,032	91	20.51
West South Central	**13,354**	**37**	**5.02**	**16**	**73**	**8.25**	**13,370**	**38**	**5.02**
Arkansas	–	–	–	–	–	–	–	–	–
Louisiana	–	–	–	–	–	–	–	–	–
Oklahoma	599	98	16.18	–	–	–	599	98	16.18
Texas	12,755	34	4.49	16	73	8.25	12,771	34	4.50
Mountain	**39,181**	**35**	**6.82**	**329**	**98**	**21.48**	**39,511**	**36**	**6.95**
Arizona	6,529	19	4.02	235	109	24.35	6,763	22	4.73
Colorado	6,994	49	9.59	95	70	14.36	7,089	49	9.66
Idaho	–	–	–	–	–	–	–	–	–
Montana	2,316	30	4.94	–	–	–	2,316	30	4.94
Nevada	4,994	50	11.02	–	–	–	4,994	50	11.02
New Mexico	8,020	26	4.63	–	–	–	8,020	26	4.63
Utah	1,869	64	14.84	–	–	–	1,869	64	14.84
Wyoming	8,459	29	5.05	–	–	–	8,459	29	5.05
Pacific	**3,600**	**75**	**12.19**	–	–	–	**3,600**	**75**	**12.19**
California	–	–	–	–	–	–	–	–	–
Oregon	–	–	–	–	–	–	–	–	–
Washington	3,600	75	12.19	–	–	–	3,600	75	12.19
Total	**390,989**	**84**	**17.90**	**63,869**	**92**	**21.33**	**454,858**	**85**	**18.38**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 110. Cost of Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1981

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl
New England	**62,730**	**502**	**31.34**	**4,784**	**472**	**29.62**	**67,514**	**500**	**31.21**
Connecticut	18,282	557	34.53	-	-	-	18,282	557	34.53
Maine	2,803	543	33.85	1,009	505	31.75	3,812	533	33.30
Massachusetts	37,955	476	29.80	2,358	452	28.37	40,314	475	29.72
New Hampshire	3,584	470	29.46	287	457	28.36	3,871	469	29.38
Rhode Island	98	398	25.09	1,116	486	30.52	1,214	479	30.08
Vermont	7	824	46.61	14	726	41.74	21	759	43.44
Middle Atlantic	**87,156**	**528**	**32.71**	**4,503**	**564**	**34.59**	**91,659**	**529**	**32.80**
New Jersey	10,430	588	35.85	727	510	31.69	11,157	582	35.58
New York	63,767	510	31.77	725	597	36.27	64,492	511	31.82
Pennsylvania	12,959	566	34.81	3,051	569	34.86	16,010	566	34.82
East North Central	**16,052**	**693**	**42.75**	**2,720**	**618**	**37.37**	**18,772**	**682**	**41.97**
Illinois	10,712	736	46.03	22	749	43.27	10,734	736	46.02
Indiana	408	771	45.12	317	742	42.72	726	759	44.07
Michigan	4,260	578	34.95	1,943	595	36.24	6,203	583	35.35
Ohio	371	665	39.07	438	629	38.17	809	645	38.58
Wisconsin	300	647	37.75	-	-	-	300	647	37.75
West North Central	**497**	**534**	**32.81**	**438**	**729**	**42.27**	**935**	**622**	**37.24**
Iowa	10	697	40.67	87	744	43.11	97	739	42.86
Kansas	-	-	-	64	712	40.98	64	712	40.98
Minnesota	49	548	34.77	3	482	27.62	52	544	34.33
Missouri	406	510	31.43	97	712	41.42	504	547	33.37
Nebraska	-	-	-	92	722	41.87	92	722	41.87
North Dakota	32	784	44.89	53	738	43.30	85	754	43.90
South Dakota	-	-	-	41	788	45.27	41	788	45.27
South Atlantic	**91,422**	**494**	**30.88**	**6,329**	**478**	**30.11**	**97,751**	**493**	**30.83**
Delaware	4,709	525	32.88	376	449	28.46	5,086	520	32.56
District of Columbia	849	594	35.98	-	-	-	849	594	35.98
Florida	70,221	481	30.14	5,839	477	30.09	76,059	480	30.13
Georgia	836	657	39.14	13	750	43.41	849	659	39.20
Maryland	5,883	525	32.54	-	-	-	5,883	525	32.54
North Carolina	397	737	42.70	-	-	-	397	737	42.70
South Carolina	1,736	500	30.82	-	-	-	1,736	500	30.82
Virginia	6,256	523	32.48	53	473	27.79	6,309	522	32.44
West Virginia	534	748	43.99	48	749	44.37	582	748	44.02
East South Central	**3,225**	**450**	**28.15**	**119**	**753**	**43.76**	**3,344**	**460**	**28.70**
Alabama	162	781	44.99	69	778	44.78	231	780	44.93
Kentucky	124	825	47.61	32	746	43.73	156	809	46.83
Mississippi	2,697	386	24.46	18	672	39.86	2,715	387	24.58
Tennessee	242	824	47.86	-	-	-	242	824	47.86
West South Central	**5,200**	**482**	**29.88**	**1,674**	**473**	**28.98**	**6,874**	**480**	**29.66**
Arkansas	841	399	24.95	153	441	27.67	993	405	25.37
Louisiana	3,974	486	30.14	623	563	35.01	4,597	496	30.80
Oklahoma	-	-	-	164	647	38.47	164	647	38.47
Texas	386	629	37.98	734	363	22.02	1,120	455	27.52
Mountain	**341**	**612**	**36.29**	**439**	**635**	**37.84**	**779**	**625**	**37.16**
Arizona	-	-	-	194	702	41.54	194	702	41.54
Colorado	51	520	31.78	57	751	43.37	108	639	37.90
Idaho	-	-	-	-	-	-	-	-	-
Montana	*	584	32.40	-	-	-	*	584	32.40
Nevada	119	550	32.92	114	462	28.15	233	507	30.58
New Mexico	170	686	40.03	-	-	-	170	686	40.03
Utah	-	-	-	70	640	38.40	70	640	38.40
Wyoming	-	-	-	4	760	44.60	4	760	44.60
Pacific	**46,760**	**664**	**40.82**	**381**	**658**	**38.73**	**47,141**	**664**	**40.81**
California	46,760	664	40.82	277	654	39.09	47,037	664	40.81
Oregon	-	-	-	36	670	38.57	36	670	38.57
Washington	-	-	-	67	667	37.38	67	667	37.38
Total	**313,384**	**540**	**33.54**	**21,386**	**524**	**32.41**	**334,769**	**539**	**33.47**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 110. Cost of Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1980 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl
New England	**70,124**	**415**	**25.84**	**4,869**	**367**	**23.04**	**74,993**	**412**	**25.66**
Connecticut	21,406	470	28.99	–	–	–	21,406	470	28.99
Maine	3,097	443	27.68	370	406	25.31	3,467	439	27.42
Massachusetts	41,922	387	24.27	3,095	347	21.82	45,017	385	24.10
New Hampshire	3,675	381	23.78	20	596	34.39	3,695	382	23.84
Rhode Island	–	–	–	1,381	397	24.97	1,381	397	24.97
Vermont	23	660	37.81	3	678	39.12	26	662	37.95
Middle Atlantic	**90,384**	**445**	**27.47**	**5,150**	**464**	**28.44**	**95,534**	**446**	**27.52**
New Jersey	15,062	498	30.26	93	454	28.21	15,155	497	30.25
New York	56,719	425	26.41	2,530	433	26.69	59,249	426	26.42
Pennsylvania	18,603	462	28.43	2,527	497	30.19	21,130	466	28.64
East North Central	**24,032**	**510**	**31.34**	**2,500**	**496**	**29.70**	**26,531**	**509**	**31.19**
Illinois	13,511	564	35.06	29	617	35.78	13,540	564	35.06
Indiana	402	585	34.46	402	612	35.23	804	598	34.85
Michigan	8,624	413	25.20	905	490	29.36	9,529	420	25.60
Ohio	950	557	32.53	1,162	460	27.89	2,112	503	29.98
Wisconsin	544	541	31.78	2	597	34.60	546	541	31.79
West North Central	**1,524**	**474**	**28.98**	**741**	**565**	**33.04**	**2,265**	**503**	**30.31**
Iowa	83	595	34.52	45	626	36.41	127	606	35.19
Kansas	44	458	27.84	74	575	33.03	118	530	31.08
Minnesota	796	520	31.56	17	520	30.20	813	520	31.54
Missouri	506	411	25.48	289	590	34.13	795	473	28.62
Nebraska	90	332	20.99	159	484	29.15	249	428	26.20
North Dakota	5	610	35.23	52	607	35.69	57	607	35.65
South Dakota	–	–	–	106	575	33.62	106	575	33.62
South Atlantic	**98,776**	**398**	**24.89**	**11,514**	**360**	**22.58**	**110,290**	**394**	**24.65**
Delaware	5,618	434	27.14	341	411	26.01	5,959	433	27.08
District of Columbia	1,573	514	31.15	–	–	–	1,573	514	31.15
Florida	64,630	383	24.04	9,476	355	22.28	74,106	379	23.81
Georgia	874	436	26.58	170	368	23.12	1,044	425	26.01
Maryland	9,318	436	27.04	175	509	30.44	9,493	438	27.10
North Carolina	373	589	34.11	9	333	19.60	382	582	33.77
South Carolina	2,405	377	23.36	–	–	–	2,405	377	23.36
Virginia	13,693	408	25.49	1,271	349	22.01	14,964	403	25.20
West Virginia	292	630	37.07	72	629	37.25	364	630	37.11
East South Central	**5,754**	**347**	**21.60**	**291**	**490**	**29.40**	**6,045**	**353**	**21.97**
Alabama	293	634	36.60	86	639	36.74	378	635	36.63
Kentucky	87	686	39.53	66	613	36.00	152	654	38.00
Mississippi	4,980	304	19.16	139	350	21.77	5,120	305	19.24
Tennessee	394	639	37.28	–	–	–	394	639	37.28
West South Central	**9,962**	**370**	**23.04**	**2,879**	**361**	**22.19**	**12,841**	**368**	**22.85**
Arkansas	3,019	346	21.64	422	323	20.35	3,441	343	21.48
Louisiana	6,188	364	22.80	1,262	414	25.66	7,449	373	23.28
Oklahoma	–	–	–	18	530	31.58	18	530	31.58
Texas	755	512	30.68	1,178	315	18.99	1,933	392	23.55
Mountain	**2,795**	**469**	**28.45**	**2,528**	**386**	**24.09**	**5,323**	**429**	**26.38**
Arizona	1,132	495	30.17	842	466	28.82	1,974	483	29.59
Colorado	323	518	31.38	40	627	36.70	362	530	31.97
Idaho	–	–	–	–	–	–	–	–	–
Montana	11	501	27.77	–	–	–	11	501	27.77
Nevada	1,068	421	25.63	1,492	322	20.28	2,560	362	22.51
New Mexico	261	489	28.94	–	–	–	261	489	28.94
Utah	–	–	–	140	512	31.01	140	512	31.01
Wyoming	–	–	–	14	698	40.83	14	698	40.83
Pacific	**74,185**	**506**	**30.96**	**599**	**524**	**31.43**	**74,785**	**506**	**30.96**
California	74,175	506	30.96	1	495	28.92	74,176	506	30.96
Oregon	10	654	37.64	356	653	37.55	366	653	37.55
Washington	*	664	36.54	243	354	22.48	243	354	22.49
Total	**377,536**	**440**	**27.23**	**31,071**	**400**	**24.77**	**408,607**	**437**	**27.04**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 110. Cost of Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1979 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl
New England	**69,423**	**296**	**18.42**	**4,612**	**252**	**15.75**	**74,035**	**293**	**18.25**
Connecticut	18,426	333	20.54	1	94	5.77	18,427	333	20.54
Maine	2,326	288	18.01	206	270	16.79	2,532	287	17.91
Massachusetts	43,239	283	17.65	4,022	250	15.65	47,262	280	17.48
New Hampshire	4,474	272	16.98	190	217	13.42	4,664	270	16.84
Rhode Island	946	327	20.22	174	277	17.46	1,120	319	19.79
Vermont	11	509	29.76	18	571	33.35	30	548	32.00
Middle Atlantic	**103,176**	**315**	**19.40**	**4,146**	**320**	**19.40**	**107,322**	**315**	**19.40**
New Jersey	20,394	348	21.24	164	221	13.91	20,557	347	21.18
New York	61,468	298	18.45	3,104	307	18.80	64,572	298	18.46
Pennsylvania	21,314	332	20.38	879	388	22.57	22,193	334	20.46
East North Central	**30,691**	**359**	**21.88**	**4,622**	**355**	**21.33**	**35,313**	**358**	**21.81**
Illinois	14,547	390	23.94	188	443	25.65	14,735	391	23.96
Indiana	868	382	22.31	541	414	23.75	1,408	394	22.86
Michigan	12,843	319	19.56	1,804	350	20.72	14,647	323	19.70
Ohio	1,333	381	22.21	2,054	336	20.72	3,388	353	21.31
Wisconsin	1,101	359	20.96	35	474	27.56	1,136	363	21.16
West North Central	**4,518**	**300**	**18.23**	**3,300**	**318**	**19.26**	**7,818**	**308**	**18.66**
Iowa	1,152	330	18.97	520	457	26.56	1,672	370	21.33
Kansas	905	219	13.70	1,549	240	14.87	2,454	232	14.44
Minnesota	939	283	17.67	79	254	15.52	1,018	281	17.50
Missouri	1,178	372	22.48	576	355	21.03	1,753	367	22.01
Nebraska	335	225	14.30	422	390	23.30	758	314	19.31
North Dakota	9	467	27.00	50	394	23.16	59	405	23.76
South Dakota	–	–	–	103	384	22.86	103	384	22.86
South Atlantic	**118,204**	**300**	**18.66**	**12,644**	**328**	**20.39**	**130,848**	**302**	**18.83**
Delaware	6,681	327	20.27	206	365	22.60	6,886	328	20.34
District of Columbia	2,128	372	22.59	140	319	19.32	2,268	369	22.39
Florida	67,305	296	18.46	8,120	313	19.51	75,425	297	18.57
Georgia	2,637	297	18.14	55	515	29.90	2,692	301	18.36
Maryland	13,691	306	18.94	752	377	22.79	14,443	310	19.14
North Carolina	439	398	23.08	15	330	19.35	454	396	22.96
South Carolina	3,995	271	16.87	6	466	27.43	4,001	271	16.88
Virginia	20,878	294	18.40	3,259	346	21.57	24,137	301	18.83
West Virginia	450	410	24.09	91	460	27.22	541	418	24.62
East South Central	**10,225**	**236**	**14.74**	**1,133**	**266**	**16.47**	**11,357**	**239**	**14.91**
Alabama	331	410	23.59	107	494	28.51	438	431	24.79
Kentucky	113	450	26.01	36	467	27.47	149	455	26.36
Mississippi	9,387	219	13.80	989	237	14.76	10,376	221	13.89
Tennessee	393	453	26.39	–	–	–	393	453	26.39
West South Central	**16,696**	**271**	**16.83**	**9,479**	**263**	**16.24**	**26,176**	**268**	**16.62**
Arkansas	6,481	252	15.85	1,129	250	15.68	7,611	251	15.82
Louisiana	9,024	281	17.30	6,214	259	16.07	15,238	272	16.80
Oklahoma	6	145	8.40	145	445	26.02	151	432	25.27
Texas	1,184	305	18.69	1,991	268	16.37	3,175	282	17.23
Mountain	**4,486**	**328**	**19.95**	**4,608**	**317**	**19.71**	**9,093**	**322**	**19.83**
Arizona	1,792	356	21.69	3,774	311	19.49	5,566	325	20.20
Colorado	629	363	21.78	66	414	24.71	695	367	22.06
Idaho	–	–	–	*	336	19.27	*	336	19.27
Montana	23	301	18.08	2	709	40.07	25	337	20.14
Nevada	1,279	259	15.90	341	350	21.51	1,620	278	17.08
New Mexico	763	355	21.16	148	283	16.73	911	343	20.44
Utah	–	–	–	264	342	20.58	264	342	20.58
Wyoming	–	–	–	11	458	26.76	11	458	26.76
Pacific	**101,490**	**316**	**19.33**	**2,137**	**494**	**29.35**	**103,627**	**319**	**19.53**
California	101,427	316	19.32	407	389	23.71	101,834	316	19.33
Oregon	50	608	34.99	1,270	619	35.62	1,320	619	35.59
Washington	12	495	28.07	460	269	17.07	472	274	17.35
Total	**458,908**	**308**	**19.01**	**46,682**	**313**	**19.26**	**505,590**	**308**	**19.03**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 110. Cost of Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1978 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl
New England	**68,411**	**198**	**12.25**	**7,898**	**189**	**11.79**	**76,309**	**197**	**12.20**
Connecticut	19,949	212	13.08	–	–	–	19,949	212	13.08
Maine	365	222	13.77	1,447	205	12.72	1,812	208	12.93
Massachusetts	44,015	191	11.87	5,825	184	11.49	49,841	190	11.83
New Hampshire	3,438	193	11.98	104	217	13.31	3,542	194	12.02
Rhode Island	644	209	12.81	522	199	12.24	1,166	204	12.55
Vermont	–	–	–	–	–	–	–	–	–
Middle Atlantic	**133,958**	**214**	**13.11**	**11,298**	**224**	**13.57**	**145,256**	**214**	**13.15**
New Jersey	28,522	226	13.80	978	212	13.04	29,500	226	13.77
New York	77,200	204	12.59	7,111	209	12.78	84,311	204	12.60
Pennsylvania	28,236	228	13.86	3,209	263	15.50	31,445	231	14.02
East North Central	**39,107**	**266**	**16.08**	**11,844**	**267**	**15.82**	**50,951**	**266**	**16.02**
Illinois	16,364	264	15.99	1,459	264	15.94	17,823	264	15.98
Indiana	1,780	251	14.56	2,220	277	15.89	4,000	266	15.30
Michigan	16,986	266	16.25	3,099	264	15.65	20,085	265	16.16
Ohio	2,946	292	16.84	3,707	266	16.03	6,653	277	16.39
Wisconsin	1,031	262	15.27	1,359	266	15.38	2,389	264	15.33
West North Central	**4,046**	**218**	**13.44**	**7,240**	**217**	**13.18**	**11,286**	**218**	**13.27**
Iowa	214	261	15.36	458	273	15.72	672	269	15.61
Kansas	832	213	13.11	3,732	195	12.06	4,564	199	12.25
Minnesota	1,244	213	13.35	391	243	14.57	1,635	220	13.64
Missouri	1,301	233	14.20	1,571	257	14.98	2,871	246	14.63
Nebraska	447	174	11.06	930	201	12.45	1,377	192	12.00
North Dakota	8	299	17.26	36	284	16.72	44	287	16.82
South Dakota	–	–	–	122	242	14.69	122	242	14.69
South Atlantic	**146,371**	**206**	**12.72**	**8,070**	**206**	**12.60**	**154,441**	**206**	**12.72**
Delaware	7,459	210	12.91	799	199	12.39	8,258	209	12.86
District of Columbia	3,865	235	14.21	–	–	–	3,865	235	14.21
Florida	73,708	203	12.55	5,015	188	11.66	78,723	202	12.50
Georgia	5,946	220	13.38	711	255	14.90	6,657	224	13.55
Maryland	20,058	205	12.56	14	277	16.53	20,072	205	12.57
North Carolina	2,137	280	16.27	601	192	11.93	2,738	260	15.31
South Carolina	6,139	203	12.55	177	276	16.06	6,316	205	12.64
Virginia	26,370	201	12.55	604	279	16.35	26,975	203	12.63
West Virginia	689	287	16.87	149	294	17.36	838	288	16.96
East South Central	**23,414**	**202**	**12.38**	**3,578**	**215**	**13.08**	**26,993**	**204**	**12.47**
Alabama	1,392	272	15.96	188	280	16.22	1,580	273	15.99
Kentucky	207	289	16.71	40	277	16.29	247	287	16.64
Mississippi	16,325	175	10.98	3,350	210	12.86	19,675	181	11.30
Tennessee	5,491	265	15.47	–	–	–	5,491	265	15.47
West South Central	**22,501**	**196**	**12.09**	**21,960**	**193**	**11.94**	**44,481**	**195**	**12.02**
Arkansas	11,681	200	12.44	2,067	185	11.72	13,748	198	12.33
Louisiana	8,645	194	11.77	16,442	189	11.68	25,087	190	11.71
Oklahoma	47	248	14.31	317	263	15.24	364	261	15.12
Texas	2,129	186	11.43	3,153	215	13.14	5,282	203	12.45
Mountain	**6,385**	**226**	**13.75**	**1,798**	**234**	**14.27**	**8,182**	**227**	**13.86**
Arizona	2,633	245	14.95	1,395	222	13.65	4,028	237	14.50
Colorado	555	224	13.36	137	251	15.05	692	229	13.70
Idaho	–	–	–	3	324	18.69	3	324	18.69
Montana	–	–	–	*	297	16.80	*	297	16.80
Nevada	2,714	202	12.42	14	257	15.07	2,728	202	12.44
New Mexico	438	262	15.61	11	257	14.86	449	262	15.59
Utah	45	160	10.07	107	234	13.96	152	211	12.81
Wyoming	–	–	–	130	354	20.10	130	354	20.10
Pacific	**87,396**	**259**	**15.86**	**633**	**249**	**15.14**	**88,028**	**259**	**15.86**
California	87,067	259	15.87	607	249	15.18	87,674	259	15.86
Oregon	317	254	14.61	25	252	14.07	342	254	14.58
Washington	12	236	16.76	*	333	19.48	12	297	16.85
Total	**531,589**	**220**	**13.50**	**74,338**	**215**	**13.12**	**605,928**	**219**	**13.45**

* = Number less than 0.5 rounded to zero.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 110. Cost of Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1977 (continued)

Census Region and State	Contract			Spot			Total		
	Quantity 1000 Bbls	¢ per 10⁶ Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10⁶ Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10⁶ Btu	$ per Bbl
New England	**67,120**	**216**	**13.30**	**4,816**	**199**	**12.39**	**71,937**	**215**	**13.24**
Connecticut	18,994	224	13.74	-	-	-	18,994	224	13.74
Maine	358	206	12.89	912	205	12.76	1,270	205	12.80
Massachusetts	44,364	213	13.14	3,216	196	12.19	47,579	212	13.08
New Hampshire	2,713	206	12.85	37	269	15.53	2,750	207	12.88
Rhode Island	679	213	13.11	617	200	12.47	1,296	207	12.80
Vermont	12	322	18.19	35	281	16.18	47	291	16.69
Middle Atlantic	**133,118**	**226**	**13.82**	**10,801**	**249**	**14.82**	**143,919**	**228**	**13.96**
New Jersey	29,182	237	14.37	1,028	258	15.22	30,210	238	14.40
New York	81,725	219	13.49	6,879	238	14.27	88,604	220	13.55
Pennsylvania	22,211	237	14.32	2,895	272	16.00	25,106	241	14.52
East North Central	**33,828**	**261**	**15.71**	**7,703**	**260**	**15.50**	**41,531**	**261**	**15.67**
Illinois	13,663	258	15.63	531	268	15.57	14,194	258	15.63
Indiana	1,513	218	12.57	829	270	15.64	2,342	236	13.65
Michigan	14,989	266	16.11	1,615	248	15.02	16,604	264	16.00
Ohio	3,027	275	15.89	3,099	261	15.72	6,126	268	15.81
Wisconsin	636	250	14.73	1,629	265	15.45	2,265	261	15.25
West North Central	**3,861**	**224**	**13.74**	**7,162**	**226**	**13.67**	**11,023**	**225**	**13.69**
Iowa	116	258	15.15	635	268	15.57	752	267	15.50
Kansas	672	231	14.05	4,154	212	13.00	4,827	215	13.15
Minnesota	1,435	217	13.50	435	252	14.84	1,870	225	13.81
Missouri	1,191	233	14.17	1,236	255	14.95	2,427	244	14.57
Nebraska	363	183	11.54	576	207	12.72	939	198	12.26
North Dakota	34	278	16.06	14	272	16.02	48	276	16.05
South Dakota	48	298	16.88	112	216	13.40	160	239	14.45
South Atlantic	**136,374**	**217**	**13.38**	**9,803**	**235**	**14.30**	**146,177**	**218**	**13.44**
Delaware	4,767	218	13.30	2,538	227	14.01	7,305	221	13.55
District of Columbia	3,835	225	13.87	44	273	16.46	3,879	226	13.90
Florida	69,575	215	13.31	2,308	232	13.94	71,882	215	13.33
Georgia	8,590	237	14.18	317	282	16.19	8,907	239	14.25
Maryland	15,509	217	13.35	1,188	212	13.17	16,697	217	13.34
North Carolina	1,271	271	15.73	129	293	17.18	1,401	273	15.87
South Carolina	6,682	196	12.07	247	273	16.03	6,929	199	12.21
Virginia	25,570	216	13.41	2,973	242	14.72	28,543	219	13.55
West Virginia	575	260	16.45	60	287	16.93	635	281	16.49
East South Central	**20,376**	**203**	**12.44**	**3,643**	**210**	**12.86**	**24,018**	**204**	**12.51**
Alabama	1,231	265	15.43	182	275	15.84	1,414	266	15.48
Kentucky	254	280	16.18	22	293	17.05	276	281	16.25
Mississippi	14,555	180	11.22	3,438	206	12.68	17,993	185	11.49
Tennessee	4,335	264	15.51	-	-	-	4,335	264	15.51
West South Central	**20,423**	**202**	**12.47**	**21,696**	**199**	**12.27**	**42,119**	**200**	**12.38**
Arkansas	11,891	206	12.85	2,142	190	12.05	14,033	204	12.73
Louisiana	6,784	194	11.83	16,786	196	12.16	23,571	196	12.07
Oklahoma	-	-	-	141	265	15.46	141	265	15.46
Texas	1,748	202	12.33	2,627	216	12.96	4,375	210	12.71
Mountain	**8,670**	**235**	**14.36**	**3,696**	**230**	**14.18**	**12,367**	**234**	**14.30**
Arizona	5,658	241	14.72	3,154	233	14.37	8,812	238	14.60
Colorado	470	214	12.94	301	202	12.57	771	209	12.80
Idaho	-	-	-	3	289	16.62	3	289	16.62
Montana	121	202	12.63	-	-	-	121	202	12.63
Nevada	1,434	216	13.25	-	-	-	1,434	216	13.25
New Mexico	769	256	15.21	161	212	12.70	930	249	14.78
Utah	218	198	13.16	77	260	15.27	295	212	13.71
Wyoming	-	-	-	1	340	19.28	1	340	19.28
Pacific	**130,445**	**238**	**14.53**	**2,155**	**259**	**15.60**	**132,601**	**238**	**14.55**
California	130,445	238	14.53	1,414	255	15.73	131,859	238	14.54
Oregon	-	-	-	741	266	15.34	741	266	15.34
Washington	1	280	15.71	-	-	-	1	280	15.71
Total	**554,215**	**226**	**13.84**	**71,476**	**224**	**13.66**	**625,692**	**226**	**13.82**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 110. Cost of Oil Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1976 (continued)

Census Region and State	Firm			Interruptible[1]			Total		
	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl	Quantity 1000 Bbls	¢ per 10^6 Btu	$ per Bbl
New England	**67,243**	**185**	**11.36**	**5,926**	**177**	**10.97**	**73,169**	**184**	**11.33**
Connecticut	19,214	194	11.87	–	–	–	19,214	194	11.87
Maine	–	–	–	1,831	176	10.98	1,831	176	10.98
Massachusetts	44,061	182	11.18	4,069	177	10.96	48,130	181	11.16
New Hampshire	2,943	174	10.82	26	240	13.83	2,969	175	10.85
Rhode Island	996	184	11.33	–	–	–	996	184	11.33
Vermont	29	252	14.27	–	–	–	29	252	14.27
Middle Atlantic	**122,200**	**196**	**12.01**	**10,795**	**208**	**12.40**	**132,995**	**197**	**12.04**
New Jersey	24,510	207	12.46	1,019	198	11.86	25,530	206	12.44
New York	81,059	192	11.78	8,112	204	12.21	89,172	193	11.83
Pennsylvania	16,631	204	12.37	1,663	232	13.66	18,294	207	12.49
East North Central	**27,407**	**227**	**13.60**	**5,150**	**221**	**13.04**	**32,557**	**227**	**13.51**
Illinois	9,782	223	13.45	510	226	13.22	10,293	224	13.44
Indiana	980	184	10.62	535	233	13.46	1,515	201	11.62
Michigan	13,758	231	13.81	1,461	188	11.62	15,219	226	13.60
Ohio	2,491	243	14.18	1,758	243	13.97	4,249	243	14.10
Wisconsin	396	233	13.68	884	227	13.16	1,281	229	13.32
West North Central	**3,698**	**180**	**11.16**	**6,280**	**188**	**11.50**	**9,979**	**185**	**11.37**
Iowa	21	229	13.33	304	236	13.56	325	235	13.55
Kansas	1,427	173	10.71	3,692	176	10.88	5,119	176	10.83
Minnesota	810	187	11.68	329	200	12.06	1,138	191	11.79
Missouri	816	200	12.21	700	217	12.72	1,516	208	12.44
Nebraska	611	158	9.95	1,080	196	12.10	1,691	182	11.32
North Dakota	14	255	14.75	15	243	14.27	29	249	14.50
South Dakota	–	–	–	161	180	11.29	161	180	11.29
South Atlantic	**136,627**	**184**	**11.37**	**11,300**	**199**	**12.09**	**147,927**	**185**	**11.43**
Delaware	1,541	191	11.57	5,332	193	11.82	6,874	193	11.77
District of Columbia	2,629	196	12.23	–	–	–	2,629	196	12.23
Florida	78,363	184	11.40	2,598	209	12.54	80,961	185	11.43
Georgia	8,181	206	12.38	1,129	245	13.99	9,311	211	12.57
Maryland	15,440	183	11.28	1,743	175	10.80	17,183	182	11.23
North Carolina	440	242	14.13	26	270	15.88	466	244	14.22
South Carolina	4,648	145	9.03	15	234	13.78	4,664	146	9.05
Virginia	24,982	182	11.26	419	204	12.48	25,402	182	11.28
West Virginia	402	252	14.78	37	256	14.92	438	252	14.79
East South Central	**13,263**	**188**	**11.59**	**3,007**	**196**	**11.85**	**16,270**	**189**	**11.64**
Alabama	778	237	13.70	256	232	13.38	1,034	236	13.62
Kentucky	234	246	14.16	29	240	13.72	263	245	14.11
Mississippi	9,789	172	10.86	2,722	193	11.69	12,511	177	11.04
Tennessee	2,463	233	13.59	–	–	–	2,463	233	13.59
West South Central	**16,310**	**190**	**11.85**	**8,638**	**175**	**10.89**	**24,947**	**185**	**11.51**
Arkansas	7,466	199	12.47	1,139	161	10.17	8,606	194	12.17
Louisiana	5,792	180	11.22	7,020	175	10.86	12,812	177	11.02
Oklahoma	106	176	10.51	63	174	10.53	168	175	10.52
Texas	2,946	189	11.55	416	227	13.45	3,361	193	11.78
Mountain	**6,368**	**225**	**13.73**	**1,509**	**234**	**14.03**	**7,876**	**227**	**13.79**
Arizona	4,100	229	14.03	1,112	233	14.02	5,212	230	14.03
Colorado	814	187	11.30	33	184	11.33	847	186	11.30
Idaho	–	–	–	–	–	–	–	–	–
Montana	–	–	–	*	253	14.28	*	253	14.28
Nevada	579	203	12.61	–	–	–	579	203	12.61
New Mexico	862	262	15.44	6	206	11.89	868	262	15.42
Utah	12	137	9.35	63	215	12.78	75	201	12.23
Wyoming	–	–	–	295	250	14.71	295	250	14.71
Pacific	**93,792**	**234**	**14.34**	**1,000**	**239**	**14.42**	**94,792**	**234**	**14.34**
California	93,762	234	14.34	927	241	14.57	94,689	234	14.34
Oregon	29	230	13.20	73	219	12.55	102	222	12.74
Washington	*	269	15.08	–	–	–	*	269	15.08
Total	**486,908**	**200**	**12.28**	**53,605**	**197**	**11.94**	**540,513**	**200**	**12.25**

[1] Includes Off Peak Gas.

* = Number less than 0.5 rounded to zero.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 111. Cost of Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1981

Census Region and State	Firm			Interruptible[1]			Total		
	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf
New England	**-**	**-**	**-**	**9,891**	**377**	**3.79**	**9,891**	**377**	**3.79**
Connecticut	-	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	6,949	394	3.94	6,949	394	3.94
New Hampshire	-	-	-	148	344	3.53	148	344	3.53
Rhode Island	-	-	-	2,602	327	3.34	2,602	327	3.34
Vermont	-	-	-	193	482	4.82	193	482	4.82
Middle Atlantic	**69,143**	**351**	**3.62**	**138,359**	**379**	**3.92**	**205,503**	**370**	**3.82**
New Jersey	-	-	-	79,766	400	4.14	79,766	400	4.14
New York	69,097	351	3.62	54,026	347	3.58	123,124	349	3.60
Pennsylvania	46	341	3.41	2,567	403	4.09	2,613	402	4.08
East North Central	**22,656**	**375**	**3.80**	**16,223**	**334**	**2.31**	**38,879**	**362**	**3.17**
Illinois	9,881	436	4.45	2,434	320	3.29	12,316	413	4.23
Indiana	4,203	306	3.06	700	263	2.65	4,903	300	3.00
Michigan	8,572	337	3.40	6,127	260	.41	14,698	329	2.15
Ohio	-	-	-	1,528	328	3.31	1,528	328	3.31
Wisconsin	-	-	-	5,434	365	3.68	5,434	365	3.68
West North Central	**16,711**	**219**	**1.94**	**69,842**	**231**	**2.27**	**86,553**	**229**	**2.21**
Iowa	964	286	2.87	1,721	303	3.05	2,685	297	2.99
Kansas	15,462	213	1.87	53,112	221	2.18	68,574	219	2.11
Minnesota	221	290	2.88	4,442	258	2.56	4,662	260	2.58
Missouri	-	-	-	6,709	266	2.62	6,709	266	2.62
Nebraska	51	306	3.06	3,748	239	2.25	3,800	240	2.26
North Dakota	-	-	-	-	-	-	-	-	-
South Dakota	13	342	3.20	110	213	2.13	123	226	2.24
South Atlantic	**100,824**	**133**	**1.34**	**81,930**	**288**	**2.97**	**182,754**	**204**	**2.07**
Delaware	1,162	456	4.72	3,564	407	4.22	4,726	419	4.34
District of Columbia	-	-	-	-	-	-	-	-	-
Florida	99,662	130	1.30	61,397	271	2.80	161,059	184	1.87
Georgia	-	-	-	2,731	344	3.53	2,731	344	3.53
Maryland	-	-	-	5,999	276	2.81	5,999	276	2.81
North Carolina	-	-	-	761	448	4.63	761	448	4.63
South Carolina	-	-	-	5,126	329	3.37	5,126	329	3.37
Virginia	-	-	-	2,134	354	3.89	2,134	354	3.89
West Virginia	-	-	-	218	448	4.48	218	448	4.48
East South Central	**74,861**	**262**	**2.67**	**2,844**	**262**	**2.70**	**77,706**	**262**	**2.67**
Alabama	1,567	288	3.28	178	303	3.38	1,745	290	3.29
Kentucky	-	-	-	2,581	258	2.64	2,581	258	2.64
Mississippi	73,294	261	2.65	86	293	2.92	73,380	261	2.65
Tennessee	-	-	-	-	-	-	-	-	-
West South Central	**1,818,551**	**234**	**2.43**	**316,922**	**298**	**3.08**	**2,135,473**	**244**	**2.52**
Arkansas	458	293	2.98	55,539	268	2.75	55,996	269	2.75
Louisiana	339,056	255	2.66	74,679	342	3.55	413,735	271	2.82
Oklahoma	267,217	188	1.97	16,777	260	2.68	283,994	192	2.01
Texas	1,211,819	239	2.46	169,928	292	3.02	1,381,746	246	2.53
Mountain	**74,465**	**277**	**2.87**	**86,755**	**301**	**3.15**	**161,220**	**290**	**3.02**
Arizona	38,452	277	2.90	19,630	245	2.58	58,082	266	2.79
Colorado	687	144	1.35	12,197	335	3.27	12,884	325	3.17
Idaho	-	-	-	16	421	4.58	16	421	4.58
Montana	2,046	394	4.23	6	306	3.01	2,052	394	4.23
Nevada	22,312	269	2.88	22,236	359	3.86	44,549	[illegible]	3.38
New Mexico	10,968	276	2.61	30,253	285	3.02	41,221	283	2.91
Utah	-	-	-	2,315	229	2.13	2,315	229	2.13
Wyoming	-	-	-	101	458	3.92	101	458	3.92
Pacific	**4,578**	**431**	**4.49**	**650,103**	**399**	**4.21**	**654,681**	**399**	**4.21**
California	4,578	431	4.49	649,468	399	4.21	654,046	399	4.21
Oregon	-	-	-	188	440	4.60	188	440	4.60
Washington	-	-	-	447	382	3.94	447	382	3.94
Total	**2,181,790**	**238**	**2.45**	**1,370,869**	**352**	**3.65**	**3,552,659**	**282**	**2.91**

[1] Includes Off Peak Gas.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 111. Cost of Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1980 (continued)

Census Region and State	Firm			Interruptible[1]			Total		
	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf
New England	**-**	**-**	**-**	**6,719**	**344**	**3.44**	**6,719**	**344**	**3.44**
Connecticut	-	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	6,480	340	3.40	6,480	340	3.40
New Hampshire	-	-	-	-	-	-	-	-	-
Rhode Island	-	-	-	-	-	-	-	-	-
Vermont	-	-	-	239	450	4.50	239	450	4.50
Middle Atlantic	**20,905**	**292**	**3.07**	**181,806**	**280**	**2.89**	**202,711**	**281**	**2.91**
New Jersey	-	-	-	80,312	301	3.12	80,312	301	3.12
New York	20,863	292	3.07	99,820	261	2.70	120,683	267	2.76
Pennsylvania	42	319	3.19	1,675	361	3.68	1,716	360	3.67
East North Central	**28,558**	**305**	**3.09**	**29,417**	**283**	**2.28**	**57,975**	**295**	**2.68**
Illinois	12,958	340	3.47	5,618	269	2.78	18,575	318	3.26
Indiana	1,186	259	2.60	271	216	2.17	1,456	251	2.52
Michigan	13,780	275	2.78	8,444	266	.78	22,224	274	2.02
Ohio	635	299	3.03	3,014	288	2.89	3,649	290	2.92
Wisconsin	-	-	-	12,070	294	2.96	12,070	294	2.96
West North Central	**20,485**	**195**	**1.79**	**106,416**	**186**	**1.81**	**126,901**	**187**	**1.81**
Iowa	1,995	214	2.13	3,402	256	2.60	5,397	241	2.43
Kansas	18,206	193	1.74	71,219	174	1.70	89,425	178	1.71
Minnesota	176	219	2.18	6,404	198	1.97	6,580	199	1.97
Missouri	-	-	-	14,474	222	2.17	14,474	222	2.17
Nebraska	90	236	2.36	10,367	181	1.72	10,457	182	1.73
North Dakota	-	-	-	-	-	-	-	-	-
South Dakota	17	283	2.62	551	194	1.92	568	197	1.94
South Atlantic	**94,286**	**115**	**1.15**	**86,920**	**230**	**2.38**	**181,205**	**171**	**1.74**
Delaware	1,121	353	3.66	5,263	346	3.61	6,385	347	3.62
District of Columbia	-	-	-	-	-	-	-	-	-
Florida	93,161	112	1.12	63,558	212	2.19	156,719	153	1.55
Georgia	-	-	-	3,640	256	2.65	3,640	256	2.65
Maryland	-	-	-	5,226	250	2.56	5,226	250	2.56
North Carolina	-	-	-	1,469	315	3.26	1,469	315	3.26
South Carolina	4	261	2.84	5,410	241	2.48	5,414	241	2.48
Virginia	-	-	-	2,223	289	3.19	2,223	289	3.19
West Virginia	-	-	-	132	299	2.99	132	299	2.99
East South Central	**92,786**	**212**	**2.16**	**2,433**	**224**	**2.32**	**95,220**	**212**	**2.16**
Alabama	1,029	265	3.02	352	252	2.80	1,381	262	2.96
Kentucky	-	-	-	1,893	216	2.21	1,893	216	2.21
Mississippi	91,757	211	2.15	188	256	2.55	91,945	211	2.15
Tennessee	-	-	-		-	-	-	-	-
West South Central	**1,895,245**	**178**	**1.85**	**331,424**	**238**	**2.46**	**2,226,668**	**187**	**1.94**
Arkansas	-	-	-	59,830	216	2.21	59,830	216	2.21
Louisiana	334,186	183	1.90	84,523	274	2.85	418,709	201	2.09
Oklahoma	313,990	173	1.81	10,898	218	2.24	324,888	174	1.82
Texas	1,247,069	177	1.84	176,172	230	2.38	1,423,241	184	1.91
Mountain	**69,270**	**253**	**2.65**	**89,603**	**254**	**2.59**	**158,873**	**253**	**2.62**
Arizona	33,407	252	2.67	15,577	218	2.30	48,984	241	2.55
Colorado	869	163	1.54	30,822	267	2.62	31,691	264	2.59
Idaho	-	-	-	48	376	3.90	48	376	3.90
Montana	4,074	387	4.06	8	192	1.88	4,082	387	4.06
Nevada	18,923	237	2.55	8,196	310	3.29	27,120	259	2.78
New Mexico	11,996	239	2.34	30,849	250	2.62	42,846	247	2.54
Utah	-	-	-	4,045	200	1.91	4,045	200	1.91
Wyoming	-	-	-	58	461	3.90	58	461	3.90
Pacific	**89**	**306**	**3.15**	**512,334**	**353**	**3.71**	**512,423**	**353**	**3.71**
California	-	-	-	509,567	353	3.71	509,567	353	3.71
Oregon	-	-	-	2,704	428	4.26	2,704	428	4.26
Washington	89	306	3.15	62	397	4.09	151	343	3.54
Total	**2,221,624**	**182**	**1.88**	**1,347,071**	**286**	**2.95**	**3,568,694**	**221**	**2.29**

[1] Includes Off Peak Gas.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 423.

Table 111. Cost of Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1979 (continued)

Census Region and State	Firm			Interruptible[1]			Total		
	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf
New England	**-**	**-**	**-**	**8,538**	**265**	**2.68**	**8,538**	**265**	**2.68**
Connecticut	-	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	6,639	269	2.70	6,639	269	2.70
New Hampshire	-	-	-	28	295	2.95	28	295	2.95
Rhode Island	-	-	-	1,337	247	2.58	1,337	247	2.58
Vermont	-	-	-	534	263	2.63	534	263	2.63
Middle Atlantic	**1**	**238**	**2.38**	**104,161**	**237**	**2.45**	**104,161**	**237**	**2.45**
New Jersey	-	-	-	30,497	257	2.67	30,497	257	2.67
New York	-	-	-	73,119	229	2.36	73,119	229	2.36
Pennsylvania	1	238	2.38	544	300	3.01	545	300	3.01
East North Central	**42,834**	**262**	**2.65**	**38,979**	**220**	**1.60**	**81,813**	**245**	**2.15**
Illinois	22,870	278	2.83	3,884	226	2.33	26,755	270	2.76
Indiana	2,208	226	2.26	216	149	1.50	2,424	219	2.20
Michigan	17,165	245	2.48	15,369	200	.60	32,535	236	1.58
Ohio	497	203	1.61	2,227	199	1.74	2,724	199	1.72
Wisconsin	94	270	2.73	17,283	227	2.30	17,377	228	2.30
West North Central	**16,974**	**180**	**1.63**	**131,857**	**146**	**1.42**	**148,830**	**149**	**1.44**
Iowa	1,426	198	2.00	6,593	200	2.02	8,019	200	2.02
Kansas	15,257	178	1.59	89,208	139	1.35	104,464	144	1.38
Minnesota	160	190	1.89	4,997	172	1.70	5,157	173	1.71
Missouri	-	-	-	19,674	153	1.49	19,674	153	1.49
Nebraska	109	203	2.03	11,236	144	1.37	11,345	145	1.38
North Dakota	-	-	-	-	-	-	-	-	-
South Dakota	23	238	2.22	149	183	1.81	172	190	1.87
South Atlantic	**101,426**	**106**	**1.06**	**80,789**	**178**	**1.88**	**182,215**	**139**	**1.42**
Delaware	362	267	2.76	3,764	279	2.91	4,126	278	2.90
District of Columbia	-	-	-	-	-	-	-	-	-
Florida	100,746	105	1.05	59,134	163	1.71	159,881	127	1.30
Georgia	-	-	-	2,192	258	2.83	2,192	258	2.83
Maryland	90	222	2.29	8,996	175	1.88	9,086	176	1.88
North Carolina	-	-	-	5	295	3.04	5	295	3.04
South Carolina	227	188	2.05	3,120	219	2.35	3,347	217	2.33
Virginia	-	-	-	3,493	224	2.46	3,493	224	2.46
West Virginia	-	-	-	86	277	2.77	86	277	2.77
East South Central	**60,023**	**176**	**1.78**	**8,498**	**221**	**2.45**	**68,521**	**182**	**1.86**
Alabama	-	-	-	7,283	228	2.56	7,283	228	2.56
Kentucky	70	153	1.57	904	169	1.73	974	168	1.72
Mississippi	59,953	176	1.78	311	201	2.01	60,264	176	1.78
Tennessee	-	-	-	-	-	-	-	-	-
West South Central	**1,852,389**	**149**	**1.55**	**270,069**	**207**	**2.15**	**2,122,458**	**156**	**1.63**
Arkansas	-	-	-	30,128	171	1.76	30,128	171	1.76
Louisiana	304,752	124	1.30	84,320	230	2.40	389,072	147	1.54
Oklahoma	323,322	154	1.61	7,920	186	1.91	331,242	154	1.62
Texas	1,224,315	154	1.60	147,701	203	2.09	1,372,016	159	1.65
Mountain	**51,069**	**209**	**2.19**	**136,180**	**207**	**2.14**	**187,250**	**208**	**2.15**
Arizona	18,758	229	2.41	31,599	195	2.06	50,357	207	2.19
Colorado	1,215	147	1.40	31,571	192	1.89	32,786	191	1.87
Idaho	-	-	-	455	282	2.94	455	282	2.94
Montana	1,744	211	2.28	6	166	1.63	1,750	210	2.28
Nevada	19,950	201	2.17	20,626	256	2.68	40,576	226	2.43
New Mexico	9,401	196	1.90	46,336	209	2.19	55,737	207	2.14
Utah	-	-	-	5,511	161	1.55	5,511	161	1.55
Wyoming	-	-	-	77	320	2.71	77	320	2.71
Pacific	**137**	**252**	**2.60**	**450,900**	**245**	**2.59**	**451,037**	**245**	**2.59**
California	-	-	-	447,510	245	2.58	447,510	245	2.58
Oregon	-	-	-	3,343	327	3.43	3,343	327	3.43
Washington	137	252	2.60	47	299	3.08	185	264	2.72
Total	**2,124,855**	**151**	**1.57**	**1,229,969**	**217**	**2.23**	**3,354,824**	**175**	**1.81**

[1] Includes Off Peak Gas.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 111. Cost of Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1978 (continued)

Census Region and State	Firm			Interruptible[1]			Total		
	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf
New England	–	–	–	**2,090**	**188**	**1.88**	**2,090**	**188**	**1.88**
Connecticut	–	–	–	–	–	–	–	–	–
Maine	–	–	–	–	–	–	–	–	–
Massachusetts	–	–	–	2,054	187	1.87	2,054	187	1.87
New Hampshire	–	–	–	–	–	–	–	–	–
Rhode Island	–	–	–	–	–	–	–	–	–
Vermont	–	–	–	36	222	2.22	36	222	2.22
Middle Atlantic	**123**	**253**	**2.53**	**1,801**	**169**	**1.74**	**1,923**	**174**	**1.79**
New Jersey	–	–	–	726	197	2.03	726	197	2.03
New York	–	–	–	1,075	149	1.54	1,075	149	1.54
Pennsylvania	123	253	2.53	–	–	–	123	253	2.53
East North Central	**39,499**	**242**	**2.49**	**23,024**	**180**	**1.24**	**62,523**	**224**	**1.97**
Illinois	14,822	295	3.02	3,260	178	1.84	18,082	274	2.81
Indiana	2,824	166	1.66	–	–	–	2,824	166	1.66
Michigan	18,788	217	2.19	13,101	172	.75	31,889	206	1.60
Ohio	1,894	171	.95	513	131	1.31	2,406	158	1.03
Wisconsin	1,171	219	2.15	6,150	193	1.95	7,321	197	1.98
West North Central	**15,251**	**145**	**1.33**	**135,468**	**120**	**1.17**	**150,720**	**122**	**1.19**
Iowa	1,195	184	1.87	6,310	162	1.66	7,506	165	1.69
Kansas	13.651	141	1.28	93,426	119	1.16	107,078	122	1.18
Minnesota	269	145	1.31	94	148	1.47	364	146	1.35
Missouri	–	–	–	25,766	114	1.11	25,766	114	1.11
Nebraska	127	159	1.59	9,871	110	1.07	9,998	111	1.08
North Dakota	–	–	–	–	–	–	–	–	–
South Dakota	8	154	1.42	–	–	–	8	154	1.42
South Atlantic	**112,684**	**97**	**.98**	**42,700**	**131**	**1.40**	**155,384**	**107**	**1.09**
Delaware	312	108	1.84	274	200	2.07	586	182	1.95
District of Columbia	–	–	–	–	–	–	–	–	–
Florida	112,372	97	.97	35,410	122	1.32	147,782	103	1.06
Georgia	–	–	–	4,703	170	1.74	4,703	170	1.74
Maryland	–	–	–	277	185	1.96	277	185	1.96
North Carolina	–	–	–	*	298	3.08	*	298	3.08
South Carolina	–	–	–	1,061	174	1.82	1,061	174	1.82
Virginia	–	–	–	961	180	2.20	961	180	2.20
West Virginia	–	–	–	14	175	1.75	14	175	1.75
East South Central	**42,443**	**142**	**1.43**	**8,869**	**184**	**2.02**	**51,312**	**149**	**1.53**
Alabama	318	212	2.43	6,629	208	2.34	6,948	208	2.35
Kentucky	–	–	–	2,218	105	1.07	2,218	105	1.07
Mississippi	42,125	141	1.42	22	190	1.90	42,147	141	1.42
Tennessee	–	–	–	–	–	–	–	–	–
West South Central	**1,964,354**	**127**	**1.32**	**266,301**	**183**	**1.91**	**2,230,655**	**134**	**1.39**
Arkansas	*	187	1.89	6,976	110	1.16	6,976	110	1.16
Louisiana	281,027	85	89	87,280	196	2.08	368,307	111	1.17
Oklahoma	341,708	141	1.48	6,986	160	1.61	348,694	142	1.48
Texas	1,341,619	133	1.37	165,059	181	1.87	1,506,678	138	1.42
Mountain	**48,902**	**145**	**1.52**	**120,274**	**147**	**1.53**	**169,176**	**146**	**1.53**
Arizona	21,348	137	1.46	33,395	130	1.39	54,743	133	1.42
Colorado	1,744	127	1.22	26,765	130	1.29	28,509	130	1.29
Idaho	–	–	–	42	212	2.22	42	212	2.22
Montana	643	70	.81	22	110	1.06	665	71	.82
Nevada	15,413	147	1.59	6,284	180	1.92	21,697	156	1.68
New Mexico	9,753	166	1.63	50,784	163	1.72	60,537	164	1.70
Utah	–	–	–	2,908	132	1.25	2,908	132	1.25
Wyoming	–	–	–	74	251	2.10	74	251	2.10
Pacific	–	–	–	**300,136**	**218**	**2.31**	**300,136**	**218**	**2.31**
California	–	–	–	299,000	218	2.31	299,000	218	2.31
Oregon	–	–	–	1,136	228	2.38	1,136	228	2.38
Washington	–	–	–	–	–	–	–	–	–
Total	**2,223,256**	128	1.33	**900,663**	179	1.84	**3,123,919**	143	1.48

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[1] Includes Off Peak Gas.

* = Number less than 0.5 rounded to zero.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 111. Cost of Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1977 (continued)

Census Region and State	Firm			Interruptible[1]			Total		
	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10^6 Btu	$ per Mcf
New England	**58**	**200**	**2.00**	**3,524**	**189**	**1.89**	**3,582**	**189**	**1.89**
Connecticut	-	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	3,143	188	1.88	3,143	188	1.88
New Hampshire	-	-	-	-	-	-	-	-	-
Rhode Island	-	-	-	-	-	-	-	-	-
Vermont	58	200	2.00	381	201	2.01	440	201	2.01
Middle Atlantic	**11**	**207**	**2.07**	**10,951**	**165**	**1.70**	**10,962**	**165**	**1.70**
New Jersey	-	-	-	7,019	179	1.84	7,019	179	1.84
New York	-	-	-	3,932	141	1.45	3,932	141	1.45
Pennsylvania	11	207	2.07	-	-	-	11	207	2.07
East North Central	**23,759**	**195**	**1.91**	**26,541**	**163**	**1.06**	**50,300**	**181**	**1.46**
Illinois	5,011	198	2.03	6,092	164	1.69	11,103	179	1.84
Indiana	419	154	1.55	325	107	1.09	744	133	1.35
Michigan	16,536	198	2.00	14,499	159	.55	31,036	189	1.32
Ohio	1,732	140	.75	1,122	142	1.34	2,854	141	.98
Wisconsin	61	179	1.83	4,502	175	1.77	4,564	175	1.77
West North Central	**16,725**	**112**	**1.05**	**151,881**	**104**	**1.02**	**168,606**	**105**	**1.03**
Iowa	3,700	126	1.26	9,030	131	1.33	12,730	130	1.31
Kansas	12,656	108	1.00	105,098	100	.99	117,755	101	.99
Minnesota	315	99	.70	2,880	112	1.12	3,195	111	1.08
Missouri	8	115	1.10	23,115	112	1.09	23,123	112	1.09
Nebraska	41	133	1.33	11,722	97	.94	11,763	97	.94
North Dakota	-	-	-	-	-	-	-	-	-
South Dakota	4	117	1.11	36	121	1.20	40	120	1.19
South Atlantic	**106,937**	**82**	**.83**	**32,584**	**116**	**1.25**	**139,521**	**91**	**.93**
Delaware	-	-	-	447	184	2.03	447	184	2.03
District of Columbia	-	-	-	-	-	-	-	-	-
Florida	106,929	82	.83	24,460	109	1.16	131,388	88	.88
Georgia	-	-	-	6,343	130	1.33	6,343	130	1.33
Maryland	-	-	-	61	208	2.08	61	208	2.08
North Carolina	-	-	-	*	399	4.13	*	399	4.13
South Carolina	-	-	-	-	-	-	-	-	-
Virginia	-	-	-	1,266	164	1.92	1,266	164	1.92
West Virginia	9	197	1.97	7	198	1.98	16	197	1.97
East South Central	**40,465**	**138**	**1.42**	**2,146**	**151**	**1.56**	**42,612**	**139**	**1.43**
Alabama	2,330	178	2.15	1,429	170	1.94	3,759	175	2.07
Kentucky	7	136	1.36	718	108	1.10	724	108	1.10
Mississippi	38,128	135	1.38	-	-	-	38,128	135	1.38
Tennessee	-	-	-	-	-	-	-	-	-
West South Central	**1,863,286**	**112**	**1.16**	**292,917**	**156**	**1.61**	**2,156,183**	**118**	**1.22**
Arkansas	-	-	-	6,752	97	1.02	6,752	97	1.02
Louisiana	255,203	67	.70	86,911	161	1.72	342,114	91	.98
Oklahoma	325,989	129	1.35	6,839	142	1.46	332,828	130	1.36
Texas	1,282,074	117	1.20	192,415	156	1.58	1,474,489	122	1.25
Mountain	**32,700**	**130**	**1.37**	**133,793**	**136**	**1.39**	**166,493**	**135**	**1.39**
Arizona	10,048	110	1.17	19,223	107	1.14	29,271	108	1.15
Colorado	2,005	102	.98	31,216	104	1.03	33,221	104	1.03
Idaho	-	-	-	676	194	2.04	676	194	2.04
Montana	531	46	.55	204	129	1.42	735	67	.79
Nevada	9,164	140	1.51	22,182	188	1.98	31,346	173	1.84
New Mexico	10,953	152	1.55	55,570	143	1.47	66,523	144	1.48
Utah	-	-	-	4,649	109	1.03	4,649	109	1.03
Wyoming	-	-	-	73	208	1.78	73	208	1.78
Pacific	**58**	**158**	**1.65**	**359,974**	**210**	**2.22**	**360,032**	**210**	**2.22**
California	58	158	1.65	359,026	210	2.22	359,084	210	2.22
Oregon	-	-	-	948	194	2.02	948	194	2.02
Washington	-	-	-	-	-	-	-	-	-
Total	**2,083,981**	**112**	**1.16**	**1,014,311**	**164**	**1.69**	**3,098,292**	**129**	**1.33**

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[1] Includes Off Peak Gas.

* = Number less than 0.5 rounded to zero.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

Table 111. Cost of Gas Receipts at Electric Utilities for Plants with a Capacity of 25 Megawatts or Greater, by Type of Purchase, by Census Region and State, 1976 (continued)

Census Region and State	Firm			Interruptible[1]			Total		
	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf	Quantity 1000 Mcf	¢ per 10⁶ Btu	$ per Mcf
New England	**-**	**-**	**-**	**2,742**	**154**	**1.54**	**2,742**	**154**	**1.54**
Connecticut	-	-	-	-	-	-	-	-	-
Maine	-	-	-	-	-	-	-	-	-
Massachusetts	-	-	-	2,675	153	1.53	2,675	153	1.53
New Hampshire	-	-	-	4	180	1.80	4	180	1.80
Rhode Island	-	-	-	-	-	-	-	-	-
Vermont	-	-	-	64	176	1.76	64	176	1.76
Middle Atlantic	**29**	**164**	**1.64**	**9,417**	**123**	**1.27**	**9,446**	**124**	**1.27**
New Jersey	-	-	-	4,231	143	1.48	4,231	143	1.48
New York	-	-	-	5,185	107	1.10	5,185	107	1.10
Pennsylvania	29	164	1.64	-	-	-	29	164	1.64
East North Central	**57,629**	**157**	**1.57**	**38,506**	**120**	**.79**	**96,135**	**148**	**1.26**
Illinois	17,531	145	1.49	4,925	109	1.13	22,456	137	1.41
Indiana	2,256	113	1.13	467	86	.87	2,723	109	1.09
Michigan	36,163	167	1.65	20,606	131	.50	56,769	160	1.23
Ohio	1,679	135	1.26	2,690	121	.92	4,369	127	1.05
Wisconsin	-	-	-	9,818	119	1.21	9,818	119	1.21
West North Central	**13,561**	**84**	**.79**	**167,085**	**76**	**.75**	**180,646**	**76**	**.75**
Iowa	674	159	1.63	23,013	90	.91	23,687	92	.93
Kansas	12,658	79	.75	94,881	71	.70	107,539	71	.70
Minnesota	212	92	.76	9,618	82	.80	9,830	82	.80
Missouri	3	204	2.04	24,206	77	.75	24,208	77	.75
Nebraska	15	81	.81	14,792	81	.79	14,806	81	.79
North Dakota	-	-	-	-	-	-	-	-	-
South Dakota	-	-	-	575	86	.85	575	86	.85
South Atlantic	**113,158**	**80**	**.80**	**14,860**	**113**	**1.24**	**128,018**	**84**	**.85**
Delaware	277	42	.44	481	150	1.65	758	112	1.21
District of Columbia	-	-	-	-	-	-	-	-	-
Florida	112,867	80	.80	8,938	118	1.34	121,805	83	.84
Georgia	-	-	-	4,506	99	1.01	4,506	99	1.01
Maryland	14	151	1.41	51	165	1.57	65	162	1.53
North Carolina	-	-	-	1	336	3.48	1	336	3.48
South Carolina	-	-	-	197	101	1.04	197	101	1.04
Virginia	-	-	-	451	115	1.25	451	115	1.25
West Virginia	-	-	-	235	100	.68	235	100	.68
East South Central	**35,204**	**132**	**1.36**	**1,270**	**85**	**.87**	**36,474**	**130**	**1.35**
Alabama	3,778	166	1.92	75	90	.92	3,854	165	1.90
Kentucky	5	88	.88	767	83	.85	772	83	.85
Mississippi	31,421	127	1.30	428	88	.89	31,849	127	1.29
Tennessee	-	-	-	-	-	-	-	-	-
West South Central	**1,746,692**	**92**	**.95**	**307,450**	**128**	**1.32**	**2,054,142**	**97**	**1.00**
Arkansas	-	-	-	15,376	79	.80	15,376	79	.80
Louisiana	238,887	53	.56	104,976	137	1.46	343,863	78	.83
Oklahoma	324,163	101	1.05	6,166	108	1.11	330,329	101	1.05
Texas	1,183,642	98	1.00	180,931	127	1.29	1,364,573	102	1.03
Mountain	**30,280**	**102**	**1.06**	**129,946**	**95**	**.98**	**160,226**	**96**	**.99**
Arizona	5,626	83	.89	18,887	81	.87	24,513	82	.87
Colorado	2,145	80	.77	38,892	78	.77	41,036	78	.77
Idaho	-	-	-	110	151	1.60	110	151	1.60
Montana	385	40	.48	19	72	.70	404	41	.49
Nevada	7,480	104	1.13	17,425	158	1.68	24,905	142	1.52
New Mexico	14,568	114	1.16	52,331	91	.94	66,899	96	.98
Utah	72	80	.77	2,271	94	.89	2,343	94	.89
Wyoming	5	194	1.83	11	245	2.06	16	229	1.93
Pacific	**-**	**-**	**-**	**294,982**	**156**	**1.65**	**294,982**	**156**	**1.65**
California	-	-	-	294,192	156	1.65	294,192	156	1.65
Oregon	-	-	-	790	164	1.70	790	164	1.70
Washington	-	-	-	-	-	-	-	-	-
Total	**1,996,553**	**94**	**.96**	**966,258**	**123**	**1.25**	**2,962,810**	**103**	**1.06**

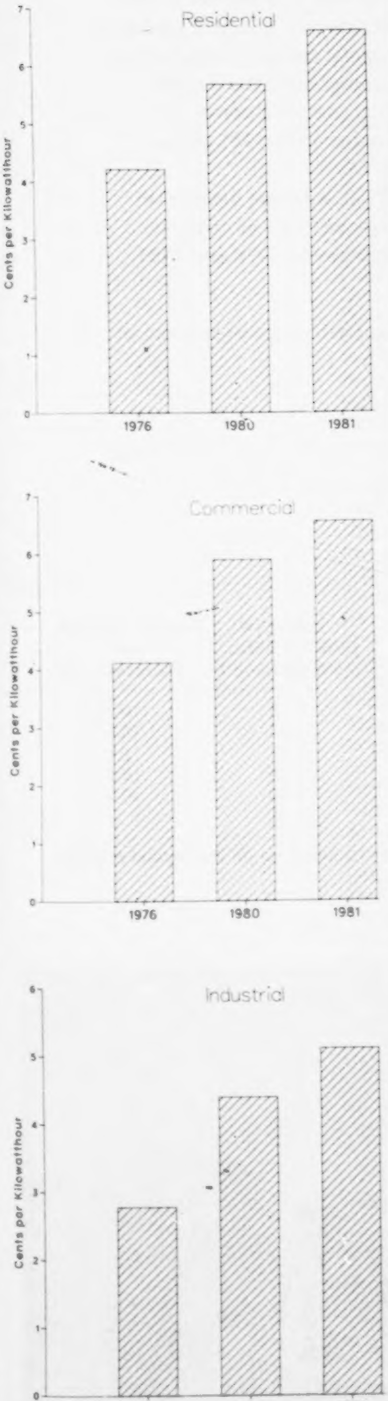
[1] Includes Off Peak Gas.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 423.

10. Electricity Retail Prices

Median Retail Prices



Source: Energy Information Administration Form 101

The retail price of electricity for customers in selected U.S. cities increased significantly during 1981. Electric utilities requested price increases to offset increasing fuel costs and general inflation. Because of the generally poor financial condition of the electric utility industry, State public utility commissions showed signs of becoming more sympathetic to utilities' requests for rate increases during 1981. Annual percent increases from 1980 in the median price for residential, commercial, and industrial customers (16.5, 11.2 and 16.4 percent respectively) indicate that residential and industrial prices rose at slightly faster rates during 1981 than prices for commercial customers. By comparison, the Bureau of Labor Statistics' all-items Consumer Price Index (CPI) rose 8.9 percent from December 31, 1980 to December 31, 1981.

The information presented in this chapter is based on electric bill data collected monthly on Energy Information Administration (EIA) Form 101 from selected electric utilities. These data are transmitted to the U.S. Bureau of Labor Statistics for use in computing the CPI and Producer Price Index. An annual EIA publication, **Typical Electric Bills,** provides comprehensive coverage of the price to customers for representative amounts of electricity consumed in residential, commercial, and industrial service. The publication gives detailed information on electric bills showing long-term trends and current averages for each type of service for U.S. cities with more than 2,500 inhabitants. The latest published data on typical electric bills appear in **Typical Electric Bills, January 1, 1981**.

For residential customers, the median price in cents per kilowatthour (kWh) for 500 kWh of electricity in 40 selected U.S. cities was 6.62 cents in 1981, an increase of 16.5 percent from 1980 when customers paid 5.68 cents for the same amount. Nationally, customers in New York City[1] (14.87 cents), Boston (9.99 cents), and San Diego (9.98 cents) paid the most per kWh in 1981 while Seattle (1.08 cents), Nashville (3.94 cents), and Portland[1], Oregon (4.20 cents) recorded the lowest prices for electricity.

In the residential category, the cities with the highest annual percent increases from 1980 to 1981 were Fort Worth (31.3), Miami (26.0), and Nashville (24.7). At the other extreme, the price of electricity in 3 of the 40 cities actually decreased from 1980 to 1981. The cities and their annual percent decreases are Seattle (19.4), Richmond (0.6), and Los Angeles (0.1).

The median price to commercial customers in 25 selected U.S. cities (based on usage of 10,000 kWh with a 40-kilowatt (kW) demand) was 6.56 cents per kWh in 1981, an increase of 11.2 percent from the median price of 5.90 cents in 1980. Among the 25 cities, commercial customers in New York[1] (14.09 cents), Boston (10.38 cents), and Newark (9.08 cents) had the highest bills for electricity. The three cities with the lowest price per kWh for electricity during 1981 were Seattle (1.63 cents), Nashville (4.85 cents), and Minneapolis (4.86 cents).

In 1981, the median price to industrial customers in 25 selected U.S. cities was 5.12 cents per kWh (based on usage of 200,000 kWh with a 500-kW demand). This price is 16.4 percent higher than in 1980 when industrial customers paid 4.40 cents. The three highest-priced cities in this category were New York City[1] (11.47 cents), Boston (7.85 cents), and Newark (6.58 cents). The three lowest-priced cities for industrial use of

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[1] A majority of the customers in the city are served at this rate.

Electricity Retail Prices (continued)

electricity in 1981 were Seattle (1.20 cents), Louisville (3.40 cents), and Minneapolis (3.82 cents).

The bar charts at left show the median price of electricity by customer category for 1981, 1980, and 1976.

Measured against the overall increase in the CPI index between December 1976 and December 1981, the overall percent increase in the median price of electricity during this same period generally did not keep pace with inflation. The CPI index for the 1976-1981 period was 61.5 percent while the overall percent increase in the median price of electricity was 57.6 percent in the residential category, and 59.2 percent in the commercial category. Only in the industrial category did the overall percent increase (84.2 percent) top the CPI rate for the 1976-1981 period.

Table 112 below shows the median prices of electricity for all customer categories between 1976 and 1981.

Note: Retail prices are averages based on monthly data.

Table 112. Median Prices of Electricity by Specified Consumption in Selected Cities, 1976-1981

(Cents Per Kilowatthour)

Year	Residential 500 kWh	Percent Change from Previous Year	Commercial (10,000 kWh, 40 kW demand[1])	Percent Change from Previous Year	Industrial (200,000 kWh, 500 kW demand[1])	Percent Change from Previous Year
1981	6.62	16.5	6.56	11.2	5.12	16.4
1980	5.68	8.8	5.90	12.4	4.40	18.6
1979	5.22	8.3	5.25	6.1	3.71	12.8
1978	4.82	5.9	4.95	6.7	3.29	7.5
1977	4.55	8.3	4.64	12.6	3.06	10.1
1976	4.20	-	4.12	-	2.78	-

[1] Price is based on both an energy consumption charge and a demand charge. The demand charge is a charge based on the highest average measured demand in the month during a specified period of time, usually 60 minutes.

Note: Retail prices are averages based on monthly data.

Source: Energy Information Administration Form 101.

Electricity Retail Prices (continued)

Table 113. Retail Prices for Residential Consumption of 500 Kilowatthours of Electricity in Selected Cities, 1976-1981

(Cents Per Kilowatthour)

City and State	1981	1980	1979	1978	1977	1976
Atlanta, Ga.	5.09	4.67	4.21	3.92	3.82	3.67
Baltimore, Md.	6.76	6.30	5.60	5.79	4.92	4.76
Boston, Mass.	9.99	8.42	6.76	5.35	5.04	4.91
Buffalo, N.Y.	6.17	5.37	4.77	4.39	4.32	3.82
Chicago, Ill.	7.82	6.86	5.63	5.13	4.62	4.41
Cincinnati, Ohio	5.21	4.66	4.44	4.21	3.79	3.06
Cleveland, Ohio[1]	7.65	6.40	5.87	4.95	4.73	3.87
Columbus, Ohio[1]	6.09	5.94	5.55	5.09	4.58	4.46
Dallas, Tex.	6.92	5.71	5.07	3.93	3.93	3.42
Denver, Colo.	6.04	5.61	4.53	4.11	3.77	3.67
Detroit, Mich.	6.82	6.21	5.67	5.33	4.99	4.57
Fort Worth, Tex.	6.59	5.02	4.32	4.27	3.51	3.37
Houston, Tex.	6.23	5.45	4.72	4.04	3.78	3.56
Indianapolis, Ind.	5.24	5.18	5.32	4.75	4.12	3.33
Kansas City, Mo.[1]	7.16	6.71	6.29	5.46	3.89	3.67
Long Beach, Calif.	7.33	6.73	5.00	4.69	4.42	4.30
Los Angeles, Calif.	6.99	7.00	5.83	5.21	4.81	4.22
Louisville, Ky.	5.12	4.49	4.04	3.87	3.23	2.95
Miami, Fla.	7.21	5.72	5.10	4.54	4.53	4.38
Milwaukee, Wis.	6.01	5.20	4.56	4.11	3.97	3.77
Minneapolis, Minn.	5.93	5.27	4.90	4.88	4.59	4.18
Nashville, Tenn.	3.94	3.16	2.83	2.83	2.85	3.09
Newark, N.J.	9.26	8.27	6.93	6.53	6.26	5.71
New Orleans, La.[1]	6.42	5.35	5.00	4.41	4.45	4.09
New York, N.Y.[1]	14.87	11.95	10.70	9.91	9.80	9.02
Philadelphia, Pa	8.30	7.55	6.12	5.70	5.63	5.31
Pittsburgh, Pa.	8.00	6.94	6.45	5.18	4.59	4.30
Portland, Oreg.[1]	4.20	3.99	3.12	2.98	2.93	2.49
Richmond, Va.	7.81	7.86	6.83	6.26	6.12	5.31
Rochester, N.Y.	6.65	5.65	5.26	4.98	4.56	4.49
San Antonio, Tex.	5.45	5.03	4.57	4.65	4.86	4.47
San Diego, Calif.	9.98	8.33	5.58	5.17	4.65	4.33
San Francisco, Calif.	6.07	5.52	3.82	4.03	3.86	3.11
St. Louis, Mo.	5.20	5.15	5.34	4.43	3.84	3.70
St. Paul, Minn.	6.20	5.53	5.17	5.10	4.85	4.42
Seattle, Wash.	1.08	1.34	1.51	1.51	1.37	1.43
Tampa, Fla.	7.74	6.70	6.11	5.62	5.14	4.94
Toledo, Ohio	7.89	7.05	6.49	6.25	5.12	4.79
Tucson, Ariz.	6.87	6.79	6.16	5.89	5.95	5.69
Washington, D.C.	5.97	5.07	4.64	4.31	4.31	4.06
Low	**1.08**	**1.34**	**1.51**	**1.51**	**1.37**	**1.43**
Median	**6.62**	**5.68**	**5.22**	**4.82**	**4.55**	**4.20**
High	**14.87**	**11.95**	**10.70**	**9.91**	**9.80**	**9.02**

[1] Majority of customers served at this rate.

Note: Retail prices for electricity (including state sales tax and all other applicable taxes) in major U.S. cities are shown for representative amounts of consumption for residential service. Retail prices are averages based on monthly data.

Source: Energy Information Administration Form 101.

Table 114. Retail Prices for Commercial Consumption of 10,000 Kilowatthours, 40-Kilowatt Demand, of Electricity in Selected Cities, 1976-1981

(Cents Per Kilowatthour)

City and State	1981	1980	1979	1978	1977	1976
Atlanta, Ga	6.65	6.18	5.46	5.29	4.85	4.58
Baltimore, Md.	NR	NR	NR	NR	NR	NR
Boston, Mass.	10.38	8.76	7.08	6.42	5.97	5.60
Buffalo, N.Y.	7.44	6.16	5.25	4.62	4.61	4.08
Chicago, Ill.	8.23	7.28	6.00	5.55	5.01	4.79
Cincinnati, Ohio	NR	NR	NR	NR	NR	NR
Cleveland, Ohio[1]	7.65	6.36	5.78	5.22	4.98	4.16
Columbus, Ohio[1]	NR	NR	NR	NR	NR	NR
Dallas, Tex.	NR	NR	NR	NR	NR	NR
Denver, Colo.	6.06	5.60	4.72	4.04	3.80	3.72
Detroit, Mich.	6.94	6.11	5.52	5.16	4.87	4.47
Fort Worth, Tex.	6.13	4.62	4.17	3.96	3.22	3.03
Houston, Tex.	6.23	5.10	4.31	NR	3.27	3.00
Indianapolis, Ind.	NR	NR	NR	NR	NR	NR
Kansas City, Mo.[1]	7.48	6.77	5.92	5.17	4.76	4.56
Long Beach, Calif.	7.01	6.64	4.72	4.70	4.11	3.88
Los Angeles, Calif.	6.50	5.81	4.57	4.81	4.53	3.94
Louisville, Ky.	5.1 3	4.29	4.03	3.68	3.06	2.77
Miami, Fla.	7.16	6.45	5.84	5.25	5.00	4.46
Milwaukee, Wis.	6.33	5.55	4.82	4.20	3.95	3.75
Minneapolis, Minn.	4.86	4.37	3.97	4.09	3.82	3.62
Nashville, Tenn.	4.85	4.12	3.63	3.22	2.74	2.59
Newark, N.J.	9.08	8.26	7.24	6.85	6.45	5.97
New Orleans, La.[1]	NR	NR	NR	NR	NR	NR
New York, N.Y.[1]	13.9 4	11.10	9.84	8.98	8.83	8.05
Philadelphia, Pa	9.18	8.19	6.44	5.98	5.89	5.39
Pittsburgh, Pa.	NR	NR	NR	NR	NR	NR
Portland, Oreg.[1]	NR	NR	NR	NR	NR	NR
Richmond, Va.	6.38	6.43	5.48	NR	NR	NR
Rochester, N.Y.	NR	NR	NR	NR	NR	NR
San Antonio, Tex.	5.51	5.09	4.56	4.41	4.66	4.24
San Diego, Calif.	NR	NR	NR	NR	NR	NR
San Francisco, Calif.	6.56	5.90	4.44	5.08	4.79	3.42
St. Louis, Mo.	5.94	5.79	5.27	5.15	4.53	4.40
St. Paul, Minn.	NR	NR	NR	NR	NR	NR
Seattle, Wash.	1.63	1.59	1.63	1.56	1.78	1.41
Tampa, Fla.	NR	NR	NR	NR	NR	NR
Toledo, Ohio	NR	NR	NR	NR	NR	NR
Tucson, Ariz.	NR	NR	NR	NR	NR	NR
Washington, D.C.	NR	NR	NR	NR	NR	NR
Low	**1.63**	**1.59**	**1.63**	**1.56**	**1.78**	**1.41**
Median	**6.56**	**5.90**	**5.25**	**4.95**	**4.64**	**4.12**
High	**14.09**	**11.10**	**9.84**	**8.98**	**8.83**	**8.05**

[1] Majority of customers served at this rate.

NR = Not reported.

Note: Retail prices for electricity (including state sales tax and all other applicable taxes) in major U.S. cities are shown for representative amounts of consumption for commercial service. Price is based both on an energy consumption charge and a demand charge. The demand charge is a charge based on the highest average measured demand in th month during a specified period of time, usually 60 minutes. Retail prices are averages based on monthly data.

Source: Energy Information Administration Form 101.

Table 115. Retail Prices for Industrial Consumption of 200,000 Kilowatthours, 500 Kilowatt Demand, of Electricity in Selected Cities, 1976-1981

(Cents Per Kilowatthour)

City and State	1981	1980	1979	1978	1977	1976
Atlanta, Ga.	4.20	3.81	3.44	3.33	3.03	2.81
Baltimore, Md.	NR	NR	NR	NR	NR	NR
Boston, Mass.	7.85	6.44	4.92	4.35	4.19	3.94
Buffalo, N.Y.	5.52	4.33	3.53	2.96	2.97	2.42
Chicago, Ill.	5.91	5.14	4.01	3.63	3.18	2.98
Cincinnati, Ohio	NR	NR	NR	NR	NR	NR
Cleveland, Ohio[1]	5.51	4.69	4.24	3.80	3.55	2.93
Columbus, Ohio[1]	NR	NR	NR	NR	NR	NR
Dallas, Tex.	NR	NR	NR	NR	NR	NR
Denver, Colo.	3.96	3.64	2.91	2.62	2.36	2.27
Detroit, Mich.	5.43	4.61	4.11	3.76	3.45	3.06
Fort Worth, Tex.	4.05	2.73	2.41	2.30	1.78	1.59
Houston, Tex.	5.12	4.14	3.47	2.83	2.52	2.25
Indianapolis, Ind.	NR	NR	NR	NR	NR	NR
Kansas City, Mo.[1]	4.93	4.47	3.91	3.24	2.94	2.67
Long Beach, Calif.	6.37	5.80	3.88	3.66	3.08	2.85
Los Angeles, Calif.	6.08	5.24	3.73	3.25	3.08	2.50
Louisville, Ky.	3.40	2.95	2.65	2.68	2.14	1.93
Miami, Fla.	5.76	4.56	3.94	3.37	3.22	2.87
Milwaukee, Wis.	4.09	3.69	3.21	2.93	2.89	2.73
Minneapolis, Minn.	3.82	3.45	3.10	3.15	2.99	2.79
Nashville, Tenn.	4.04	3.33	2.98	2.57	2.08	1.93
Newark, N.J.	6.58	5.68	4.47	4.20	4.14	3.70
New Orleans, La.[1]	NR	NR	NR	NR	NR	NR
New York, N.Y.[1]	11.47	8.90	7.75	7.09	7.06	6.55
Philadelphia, Pa	6.31	5.58	3.95	3.57	3.45	3.06
Pittsburgh, Pa.	NR	NR	NR	NR	NR	NR
Portland, Oreg.[1]	NR	NR	NR	NR	NR	NR
Richmond, Va.	4.65	4.93	3.93	NR	NR	NR
Rochester, N.Y.	NR	NR	NR	NR	NR	NR
San Antonio, Tex.	4.06	3.69	3.18	3.03	3.28	3.09
San Diego, Calif.	NR	NR	NR	NR	NR	NR
San Francisco, Calif.	6.03	5.39	3.69	4.22	3.81	2.48
St. Louis, Mo.	3.88	3.89	3.51	3.40	2.90	2.76
St. Paul, Minn.	NR	NR	NR	NR	NR	NR
Seattle, Wash.	1.20	0.96	0.85	0.81	1.05	0.70
Tampa, Fla.	NR	NR	NR	NR	NR	NR
Toledo, Ohio	NR	NR	NR	NR	NR	NR
Tucson, Ariz.	NR	NR	NR	NR	NR	NR
Washington, D.C.	NR	NR	NR	NR	NR	NR
Low	**1.20**	**0.96**	**0.85**	**0.81**	**1.05**	**0.70**
Median	**5.12**	**4.40**	**3.71**	**3.29**	**3.06**	**2.78**
High	**11.47**	**8.90**	**7.75**	**7.09**	**7.06**	**6.55**

[1] Majority of customers served at this rate.

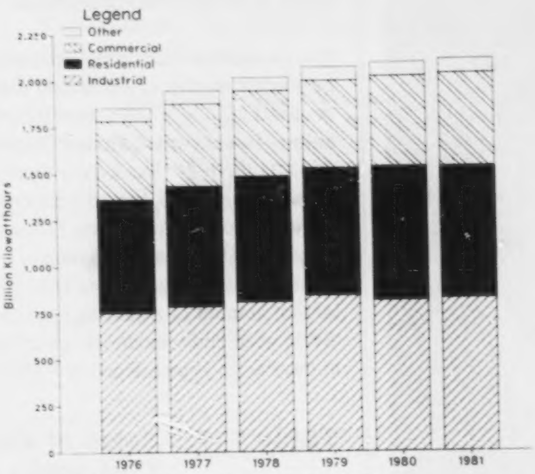
NR=Not reported.

Note: Retail prices for electricity (including state sales tax and all other applicable taxes) in major U.S. cities are shown for representative amounts of consumption for industrial service. Price is based both on an energy consumption charge and a demand charge. The demand charge is a charge based on the highest average measured demand in the month during a specified period of time, usually 60 minutes. Retail prices are averages based on monthly data.

Source: Energy Information Administration Form 101.

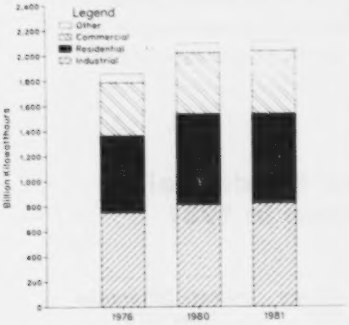
11. Utility Sales, Revenues, and Income

Figure 21. Sales of Electricity to Customers by all Utilities in the United States, 1976-1981

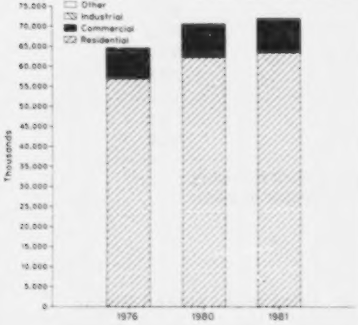


Source: Federal Energy Regulatory Commission Form 5

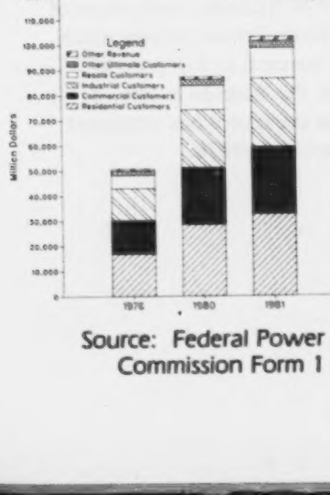
Total Sales of Electric Utilities



Total Customers of Private Owned Utilities



Revenue for Total Sales of Electricity



Source: Federal Power Commission Form 1

Electric utilities in the United States sold 2,111,440 gigawatthours (GWh) of electric energy to all customers during 1981. This amount is a new record, 0.8 percent higher than the previous record set in 1980.

During 1981, the sale of electric energy to residential customers (706,831 GWh) decreased 1.5 percent from 1980. However, the 1981 residential sales figures represent a 16.6 percent increase from the 1976 level. Commercial customers of U.S. utilities purchased 501,745 GWh of electricity in 1981, an increase of 2.8 percent from 1980 and 18.0 percent higher than in 1976. Sales to industrial customers were 825,716 GWh during 1981, an increase of 1.3 percent from 1980 and 9.5 percent from 1976. Customers in the "other" category were sold 77,149 GWh of power in 1981, an increase of 4.6 percent from 1980 and 10.8 percent from 1976.

Table 116 below shows the sales of electricity to residential, commercial, industrial, and other ultimate customers in the United States for the period 1976-1981. The bar charts at left display the same information for the years 1981, 1980, and 1976.

Table 116. Sales of Electric Energy to Ultimate Customers in the United States, 1976-1981

(Gigawatthours)

Year	Residential Customers	Commercial Customers	Industrial Customers	Other Customers	U.S. Total	Annual Percent Change
1981 ...	706,831	501,745	825,716	77,149	2,111,440	0.8
1980 ...	717,495	488,155	815,067	73,732	2,094,449	1.1
1979 ...	682,819	473,307	841,903	73,070	2,071,099	2.6
1978 ...	674,466	461,163	809,078	73,215	2,017,922	3.6
1977 ...	645,239	446,514	786,037	70,571	1,948,361	5.0
1976 ...	606,452	425,094	754,069	69,631	1,855,246	-

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Utility Sales, Revenues, and Income (continued)

Sales to Residential Customers

The residential market for electricity sold by electric utilities in the United States declined slightly in 1981 from the year before. Residential customers were sold 706,831 GWh of electricity, 1.5 percent lower than in 1980, but 16.6 percent higher than in 1976. Among Census Regions, residential customers in the South Atlantic Region were sold the largest amount of electricity (144,667 GWh) while their residential counterparts in the Pacific Noncontiguous Region were sold the smallest amount (2,879 GWh). In 1981, utilities in the Mountain Region increased sales the most (2.4 percent) while the West North Central Region led those regions that declined by recording a decrease of 6.4 percent. Since 1976, all 10 Census Regions have increased their sales of electricity. The greatest increase was 33.9 percent reported by the West South Central Region, while the Mountain Region also reported a significant increase of 29.5 percent.

Table 117. Sales of Electric Energy to Residential Customers by Census Region in 1981
(Gigawatthours)

Census Region	Residential Sales in 1981	Percent Change from 1980	Percent Difference from 1976
New England	28,612	-0.9	4.2
Middle Atlantic	77,952	-0.9	6.3
East North Central	114,934	-3.0	9.3
West North Central	54,487	-6.4	16.3
South Atlantic	144,667	1.1	22.1
East South Central	62,883	-4.3	12.3
West South Central	94,670	-1.9	33.9
Mountain	35,681	2.4	29.5
Pacific Contiguous	90,065	0.1	15.2
Pacific Noncontiguous	2,879	-1.8	5.8
Total U.S.	**706,831**	**-1.5**	**16.6**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Sales to Commercial Customers

During 1981, the South Atlantic Region also claimed the highest amount of electricity sales to commercial customers (86,964 GWh). The Pacific Noncontiguous Region (Alaska and Hawaii) recorded the smallest sales of electricity in 1981 (1,943 GWh.) The Mountain Region increased its share of sales the most (7.6 percent) from 1980 while overall, sales in the United States increased 2.8 percent from 1980. Since 1976, all 10 Census Regions have increased their sales of electricity. The East South Central Region recorded an increase of 42.5 percent, well ahead of the West South Central Region, which posted an increase of 33.6 percent. Nationwide, the increase in sales by commercial customers has increased 18.0 percent since 1976.

Utility Sales, Revenues, and Income (continued)

Table 118. Sales of Electric Energy to Commercial Customers by Census Region in 1981
(Gigawatthours)

Census Region	Commercial Sales in 1981	Percent Change from 1980	Percent Difference from 1976
New England	24,259	1.4	11.3
Middle Atlantic	70,841	1.8	12.8
East North Central	79,348	0.4	11.5
West North Central	33,402	*	14.9
South Atlantic	86,964	3.0	14.4
East South Central	31,099	0.6	42.5
West South Central	63,002	4.7	33.6
Mountain	29,918	7.6	25.7
Pacific Contiguous	80,969	5.4	16.3
Pacific Noncontiguous	1,943	-5.1	9.4
Total U.S.	**501,745**	**2.8**	**18.0**

* = increase or decrease less than 0.05 percent.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Sales to Industrial Customers

The sale of electricity to industrial customers in the United States increased 1.3 percent from 1980 to 1981. The most significant change in the sale of electricity among Census Regions was recorded in the East South Central Region where industrial sales declined by 4.7 percent. This is the only region to report a decline from 1980 to 1981. Of the regions which increased their sales of electricity from U.S. utilities in 1981, the Mountain Region recorded the largest annual percentage increase of 5.8 percent. Quantitatively, the East North Central Region sold the largest amount of electricity (166,346 GWh) while the Pacific Noncontiguous Region recorded the smallest amount of sales (3,947 GWh). Since 1976, 2 out of the 10 Census Regions have reported decreases in the amount of electricity sold to industrial customers: the East South Central and East North Central Regions. These regions reported declines of 15.0 and 2.0 percent respectively. Overall, industrial sales of electricity in the United States during 1981 were 9.5 percent higher than in 1976. The West South Central Region reported the largest percent increase since 1976 of 35.0 percent.

Table 119. Sales of Electric Energy to Industrial Customers by Census Region in 1981
(Gigawatthours)

Census Region	Industrial Sales in 1981	Percent Change from 1980	Percent Difference from 1976
New England	23,086	0.6	13.4
Middle Atlantic	94,989	0.5	8.5
East North Central	166,346	0.7	-2.0
West North Central	52,025	2.5	25.2
South Atlantic	122,186	1.8	19.1
East South Central	91,669	-4.7	-15.0
West South Central	126,859	3.8	35.0
Mountain	44,914	5.8	30.8
Pacific Contiguous	99,694	2.7	7.2
Pacific Noncontiguous	3,947	4.3	24.6
Total U.S.	**825,716**	**1.3**	**9.5**

Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Utility Sales, Revenues, and Income (continued)

Sales to Other Customers

During 1981, the sale of electricity to other customers of U.S. electric utilities reached 77,149 GWh, an increase of 4.6 percent from 1980 and an increase of 10.8 percent from 1976. The Mountain Region showed the highest annual increase of 27.0 percent while the Pacific Noncontiguous Region recorded the largest annual decline of 7.0 percent. The Pacific Noncontiguous Region also showed the largest decline since 1976 (19.5 percent). The only other region that showed a decline since 1976 was the West North Central Region (4.1 percent). The Mountain Region increased its sales of electricity the most since 1976 (28.0 percent).

Table 120. Sales of Electric Energy to Other Customers by Census Region in 1981
(Gigawatthours)

Census Region	Other Sales in 1981	Percent Change from 1980	Percent Difference from 1976
New England	1,903	-3.8	9.8
Middle Atlantic	11,871	-0.1	0.5
East North Central	13,207	-1.2	2.4
West North Central	3,838	-2.9	-4.1
South Atlantic	12,446	2.9	17.9
East South Central	4,021	*	10.5
West South Central	11,106	0.6	15.9
Mountain	5,215	27.0	28.0
Pacific Contiguous	13,411	20.4	20.1
Pacific Noncontiguous	132	-7.0	-19.5
Total U.S.	**77,149**	**4.6**	**10.8**

* = increase or decrease less than 0.05 percent.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

U.S. Customers Served in 1981

In 1981, the number of ultimate customers served by Class A and B privately owned electric utilities in the United States averaged 72.0 million customers, an increase of 2.0 percent from 1980 and 11.5 percent from 1976. Class A utilities are those with annual operating revenues of $2.5 million or more while Class B utilities are those with annual operating revenues of between $1.0 million and $2.5 million. Residential customers, numbering 63.5 million, accounted for almost 9 out of every 10 customers in 1981. Commercial customers accounted for 10.9 percent of all customers, industrial for 0.5 percent, and other customers for 0.4 percent.

Utility Sales, Revenues, and Income (continued)

Table 121. Ultimate Customers of Electricity of Class A and B Privately Owned Utilities in 1981
(Thousands)

Type of Service	Number of Cuctomers[1]	Percent Change from 1980	Percent Difference from 1976
Residential	63,547	1.9	11.5
Commercial	7,816	2.2	11.4
Industrial	383	3.0	15.7
Other	266	1.1	9.5
Total Ultimate Customers	**72,012**	**2.0**	**11.5**

[1] Estimated using Federal Energy Regulatory Commission Form 5.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Electric Operating Revenues

The amount of electricity sold by Class A and B privately owned utilities in 1981 was 1,985,642 million kWh, compared to 1,941,367 million kWh sold in 1980, and 1,708,866 million kWh sold in 1976. This translated into operating revenues from sales of electricity of $101,016 million in 1981, an increase of 17.4 percent from 1980 ($86,073 million), and 102.7 percent from 1976 ($49,846 million). Total electric operating revenues for privately owned utilities reached $102,701 million in 1981, 18.0 percent higher than in 1980 and 103.2 percent higher than in 1976.

Table 122. Electric Operating Revenues of Class A and B Privately Owned Utilities in 1981
(Million Dollars)

Revenue Source	Revenue in 1981[1]	Percent Change from 1980	Percent Difference from 1976
Residential	32,571	14.3	93.2
Commercial	26,493	18.0	101.4
Industrial	27,249	18.2	113.1
Other	2,681	13.6	57.1
Total Ultimate Customers	**88,994**	**16.5**	**100.0**
Sales for Resale	12,022	23.8	125.1
Total Sales	**101,016**	**17.4**	**102.7**
Other Revenues	1,685	70.4	138.3
Total Electric Operating Revenues	**102,701**	**18.0**	**103.2**

[1] Estimated using Federal Energy Regulatory Commission Form 5.
Note: Totals may not equal sum of components because of independent rounding.
Source: Federal Power Commission Form 1.

Utility Sales, Revenues, and Income (continued)

Table 123. Sales, Revenues, and Income of Class A and B Privately Owned Utilities, 1976-1981

Item	1981 [1]	1980	1979	1978	1977	1976
Number of Consumers (thousands)						
Residential Service	63,547	62,333	60,998	59,311	58,150	56,970
Commercial Service	7,816	7,647	7,486	7,270	7,148	7,015
Industrial Service	383	372	369	358	342	331
Other Ultimate Consumers	266	263	260	252	250	243
Total Ultimate Consumers	**72,012**	**70,616**	**69,113**	**67,191**	**65,890**	**64,560**
Sales for Resale	4	4	4	4	4	4
Total Sales	**72,016**	**70,620**	**69,117**	**67,195**	**65,894**	**64,564**
Sales of Electric Energy (million kWh)						
Residential Service	525,215	531,729	507,449	501,374	480,069	446,631
Commercial Service	420,925	409,817	396,055	386,075	382,931	352,395
Industrial Service	639,706	628,714	651,426	625,486	595,304	568,029
Other Ultimate Consumers	51,115	49,886	50,009	49,763	48,865	50,708
Total Ultimate Consumers	**1,636,961**	**1,620,146**	**1,604,939**	**1,562,698**	**1,507,169**	**1,417,762**
Sales for Resale	348,681	321,221	294,356	307,045	291,887	291,104
Total Sales	**1,985,642**	**1,941,367**	**1,899,295**	**1,869,743**	**1,799,056**	**1,708,866**
Electric Operating Revenues (million dollars)						
Residential Service	32,571	28,500	23,527	21,610	19,475	16,860
Commercial Service	26,493	22,456	18,521	16,856	15,404	13,153
Industrial Service	27,249	23,046	19,792	17,453	15,134	12,786
Other Ultimate Consumers	2,681	2,360	1,998	1,803	1,712	1,707
Total Revenues from Ultimate Consumers	**88,994**	**76,362**	**63,838**	**57,721**	**51,725**	**44,506**
Sales for Resale	12,022	9,711	7,624	6,990	6,232	5,340
Total Revenues from Sales of Electricity	**101,016**	**86,073**	**71,462**	**64,711**	**57,957**	**49,846**
Other Electric Revenues	1,685	989	1,389	716	908	707
Total Electric Operating Revenues	**102,701**	**87,062**	**72,851**	**65,427**	**58,865**	**50,553**

[1] Estimated using Federal Energy Regulatory Commission Form 5.

Note: Totals may not equal sum of components because of independent rounding.

Source: Federal Power Commission Form 1.

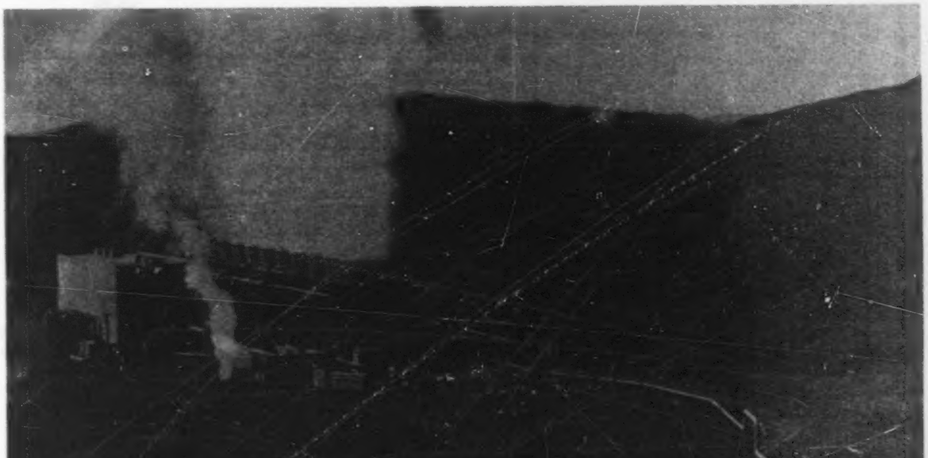


Table 124. Sales of Electric Energy to Ultimate Residential Customers by Census Region and State, 1976-1981

(Gigawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**28,612**	**28,886**	**28,584**	**28,070**	**27,496**	**27,468**
Connecticut	8,139	8,218	8,175	8,079	7,960	7,842
Maine	3,002	2,998	3,016	2,996	2,859	2,771
Massachusetts	11,361	11,571	11,422	11,242	11,089	11,227
New Hampshire	2,452	2,478	2,464	2,421	2,345	2,321
Rhode Island	1,798	1,840	1,809	1,803	1,776	1,821
Vermont	1,860	1,781	1,698	1,529	1,466	1,485
Middle Atlantic	**77,952**	**78,679**	**77,411**	**76,400**	**75,376**	**73,316**
New Jersey	15,899	16,329	15,797	15,691	15,393	15,003
New York	30,497	30,583	30,204	29,942	29,780	29,462
Pennsylvania	31,556	31,767	31,410	30,767	30,203	28,850
East North Central	**114,934**	**118,508**	**114,830**	**113,728**	**111,210**	**105,163**
Illinois	28,384	29,930	29,288	29,096	28,157	26,308
Indiana	18,606	19,262	18,316	18,262	18,048	16,673
Michigan	21,828	22,260	22,042	21,858	21,709	21,323
Ohio	32,610	33,459	31,899	31,466	30,679	28,725
Wisconsin	13,506	13,597	13,285	13,046	12,618	12,133
West North Central	**54,487**	**58,224**	**54,306**	**53,867**	**48,924**	**46,868**
Iowa	9,380	10,038	9,701	9,634	8,852	8,422
Kansas	6,466	7,189	6,290	6,571	5,964	5,758
Minnesota	11,623	11,749	11,511	11,315	10,368	10,474
Missouri	16,858	18,648	16,369	16,108	14,535	13,302
Nebraska	5,158	5,521	5,263	5,347	4,859	4,722
North Dakota	2,476	2,456	2,516	2,399	2,148	2,050
South Dakota	2,527	2,623	2,656	2,493	2,198	2,139
South Atlantic	**144,667**	**143,143**	**133,591**	**134,175**	**128,290**	**118,477**
Delaware	1,837	1,666	1,816	1,821	1,790	1,716
Florida	46,023	44,746	42,218	41,847	38,955	36,022
Georgia	19,810	20,033	18,367	19,218	18,610	16,904
Maryland/DC	13,255	13,204	12,192	12,144	11,759	11,048
North Carolina	24,340	24,377	22,614	22,648	21,851	19,987
South Carolina	12,519	12,580	11,419	11,714	11,310	10,360
Virginia	20,128	19,731	18,717	18,669	18,196	17,156
West Virginia	6,754	6,606	6,248	6,114	5,816	5,285
East South Central	**62,883**	**65,715**	**61,209**	**63,108**	**62,191**	**55,977**
Alabama	15,982	16,469	15,029	15,739	15,247	14,087
Kentucky	12,790	13,075	11,974	12,027	11,479	10,034
Mississippi	9,541	9,964	9,103	9,362	8,979	8,233
Tennessee	24,570	26,207	25,103	25,980	26,486	23,622
West South Central	**94,670**	**96,546**	**85,384**	**86,928**	**80,223**	**70,692**
Arkansas	10,084	10,227	8,862	9,322	8,816	7,746
Louisiana	16,967	16,832	15,504	15,448	14,272	12,473
Oklahoma	11,509	12,309	10,635	11,053	10,304	9,303
Texas	56,110	57,178	50,383	51,105	46,831	41,171
Mountain	**35,681**	**34,859**	**34,415**	**31,281**	**29,135**	**27,558**
Arizona	10,217	9,637	9,304	8,392	7,855	7,299
Colorado	6,669	6,693	6,415	5,948	5,527	5,351
Idaho	4,872	4,936	5,048	4,502	4,456	4,169
Montana	2,920	2,916	2,957	2,754	2,440	2,261
Nevada	3,759	3,697	3,767	3,369	2,922	2,797
New Mexico	2,485	2,453	2,397	2,249	2,154	2,053
Utah	3,297	3,116	3,209	2,900	2,761	2,672
Wyoming	1,461	1,410	1,318	1,167	1,020	957
Pacific Contiguous	**90,065**	**90,001**	**90,176**	**84,020**	**79,562**	**78,214**
California	52,656	52,011	52,421	49,321	46,555	45,751
Oregon	13,160	13,545	13,749	12,779	12,377	12,152
Washington	24,250	24,445	24,006	21,920	20,630	20,311
Pacific Noncontiguous	**2,879**	**2,933**	**2,913**	**2,889**	**2,831**	**2,720**
Alaska	1,059	1,092	1,067	1,110	1,071	983
Hawaii	1,819	1,841	1,846	1,779	1,760	1,736
Total U.S.	**706,831**	**717,495**	**682,819**	**674,466**	**645,239**	**606,452**

Note: Totals may not equal sum of components because of independent rounding. U.S. total includes all 50 states and Washington D.C. For coverage and universe definition, see Technical Notes. The 1981 data are preliminary.

Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Utility Sales, Revenues, and Income (continued)

Table 125. Sales of Electric Energy to Ultimate Commercial Customers by Census Region and State, 1976-1981
(Gigawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**24,259**	**23,917**	**23,603**	**23,113**	**22,383**	**21,801**
Connecticut	6,923	6,782	6,627	6,459	6,246	6,009
Maine	1,580	1,546	1,544	1,627	1,563	1,515
Massachusetts	12,205	12,076	12,002	11,791	11,494	11,295
New Hampshire	1,050	1,026	989	960	903	858
Rhode Island	1,707	1,712	1,700	1,633	1,564	1,533
Vermont	794	775	741	643	612	590
Middle Atlantic	**70,841**	**69,574**	**67,385**	**66,258**	**64,591**	**62,822**
New Jersey	16,741	16,446	15,714	15,412	14,712	14,219
New York	33,303	32,920	32,327	31,960	31,351	30,831
Pennsylvania	20,796	20,208	19,344	18,885	18,528	17,772
East North Central	**79,348**	**79,067**	**78,403**	**76,102**	**74,748**	**71,166**
Illinois	25,336	25,596	26,086	26,048	24,600	23,331
Indiana	9,874	9,778	9,505	8,953	9,418	8,917
Michigan	15,213	15,160	15,062	14,496	14,305	13,777
Ohio	19,813	19,483	18,725	17,989	18,220	17,370
Wisconsin	9,112	9,050	9,025	8,616	8,205	7,771
West North Central	**33,402**	**33,416**	**32,600**	**31,819**	**30,592**	**29,076**
Iowa	4,832	4,919	5,288	5,156	4,921	4,733
Kansas	6,243	6,258	5,938	5,971	5,614	5,341
Minnesota	4,986	4,909	4,780	4,596	4,497	4,429
Missouri	12,013	11,984	11,300	10,859	10,687	9,919
Nebraska	3,527	3,544	3,491	3,455	3,507	3,352
North Dakota	876	869	873	848	642	621
South Dakota	923	933	930	934	724	681
South Atlantic	**86,964**	**84,410**	**80,867**	**80,234**	**79,496**	**76,038**
Delaware	1,476	1,447	1,419	1,369	1,344	1,289
Florida	25,413	24,438	23,715	23,215	22,503	21,556
Georgia	11,657	11,306	10,762	10,865	12,528	11,823
Maryland/DC	11,185	11,144	10,952	10,820	10,463	10,656
North Carolina	13,526	13,062	12,195	12,120	11,667	10,849
South Carolina	8,049	7,824	7,372	7,579	7,192	6,703
Virginia	11,924	11,622	11,083	11,031	10,613	10,211
West Virginia	3,735	3,567	3,369	3,235	3,185	2,950
East South Central	**31,099**	**30,925**	**29,595**	**29,359**	**25,562**	**21,831**
Alabama	6,873	6,781	6,400	6,455	6,297	5,894
Kentucky	6,566	6,485	6,087	5,937	5,745	5,279
Mississippi	4,438	4,405	4,190	4,123	3,848	3,628
Tennessee	13,222	13,254	12,918	12,804	9,672	7,030
West South Central	**63,002**	**60,168**	**55,735**	**54,651**	**51,076**	**47,167**
Arkansas	4,841	4,605	4,197	4,236	4,035	3,729
Louisiana	9,479	9,021	8,568	8,430	7,729	6,946
Oklahoma	7,187	7,037	6,523	6,428	6,056	5,542
Texas	41,496	39,505	36,447	35,557	33,257	30,950
Mountain	**29,918**	**27,795**	**27,459**	**26,456**	**25,382**	**23,807**
Arizona	8,336	7,697	7,196	6,764	6,462	6,008
Colorado	7,062	6,517	6,111	5,767	5,414	5,077
Idaho	4,248	3,886	4,248	3,692	4,057	3,682
Montana	2,034	1,957	1,907	1,768	1,625	1,525
Nevada	1,644	1,534	1,958	2,707	2,233	2,259
New Mexico	2,871	2,782	2,714	2,617	2,608	2,467
Utah	2,647	2,418	2,385	2,285	2,066	2,049
Wyoming	1,076	1,004	940	856	916	740
Pacific Contiguous	**80,969**	**76,836**	**75,408**	**71,112**	**70,759**	**69,611**
California	59,397	56,213	55,036	52,368	53,300	52,599
Oregon	10,253	9,940	9,951	9,083	8,568	8,202
Washington	11,319	10,683	10,421	9,661	8,891	8,810
Pacific Noncontiguous	**1,943**	**2,048**	**2,252**	**2,059**	**1,926**	**1,776**
Alaska	545	658	913	793	728	662
Hawaii	1,398	1,390	1,339	1,266	1,198	1,114
Total U.S.	**501,745**	**488,155**	**473,307**	**481,163**	**446,514**	**425,094**

Note: Totals may not equal sum of components because of independent rounding. U.S. total includes all 50 states and Washington D.C. For coverage and universe definition, see Technical Notes. The 1981 data are preliminary.

Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Table 126. Sales of Electric Energy to Ultimate Industrial Customers by Census Region and State, 1976-1981

(Gigawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**23,088**	**22,953**	**22,804**	**21,963**	**20,844**	**20,362**
Connecticut	5,911	5,944	6,044	5,785	5,525	5,333
Maine	3,698	3,470	3,335	3,164	2,961	2,652
Massachusetts	8,469	8,486	8,443	8,235	7,951	7,785
New Hampshire	2,397	2,406	2,427	2,317	2,092	2,025
Rhode Island	1,362	1,399	1,387	1,348	1,320	1,314
Vermont	1,249	1,247	1,168	1,114	994	1,253
Middle Atlantic	**94,989**	**94,500**	**97,416**	**94,371**	**91,378**	**87,574**
New Jersey	16,283	16,345	16,579	16,365	15,624	15,313
New York	32,160	32,110	32,894	32,057	30,914	28,650
Pennsylvania	46,545	46,045	47,943	45,949	44,839	43,610
East North Central	**166,346**	**165,116**	**185,017**	**182,701**	**179,941**	**169,690**
Illinois	34,961	35,158	36,003	35,802	33,796	32,183
Indiana	31,163	30,730	33,153	31,988	31,751	30,102
Michigan	30,890	30,656	35,203	35,609	34,513	33,200
Ohio	55,924	55,283	67,164	66,195	67,615	62,642
Wisconsin	13,388	13,290	13,494	13,107	12,266	11,563
West North Central	**52,025**	**50,759**	**51,346**	**48,515**	**43,645**	**41,545**
Iowa	9,576	9,318	8,855	8,603	8,029	7,367
Kansas	7,967	7,845	7,778	7,418	6,862	6,488
Minnesota	15,979	15,525	16,169	14,784	12,447	12,265
Missouri	11,380	11,018	11,622	11,382	10,281	9,646
Nebraska	4,144	4,155	4,079	3,784	3,599	3,542
North Dakota	1,616	1,576	1,572	1,418	1,175	1,049
South Dakota	1,364	1,322	1,271	1,126	1,252	1,188
South Atlantic	**122,186**	**120,082**	**119,932**	**114,118**	**108,130**	**102,624**
Delaware	2,445	2,439	2,597	2,423	2,274	2,287
Florida	18,563	18,598	18,019	17,273	15,660	14,252
Georgia	19,777	19,195	19,107	18,520	15,734	15,060
Maryland/DC	16,814	16,413	16,299	15,321	14,880	13,593
North Carolina	25,824	25,254	25,229	24,075	23,698	22,721
South Carolina	16,460	15,979	15,986	15,419	15,068	14,365
Virginia	11,777	11,637	11,678	11,010	10,829	10,529
West Virginia	10,527	10,567	11,017	10,077	9,987	9,816
East South Central	**91,669**	**96,140**	**101,248**	**97,412**	**106,216**	**107,808**
Alabama	25,453	26,708	28,439	26,958	25,715	23,747
Kentucky	26,474	28,280	30,500	29,528	34,347	35,242
Mississippi	8,083	8,184	8,221	8,154	7,939	7,534
Tennessee	31,659	32,968	34,088	32,772	38,214	41,285
West South Central	**126,859**	**122,164**	**119,644**	**111,917**	**105,599**	**93,962**
Arkansas	11,391	10,946	10,854	9,614	9,341	8,338
Louisiana	24,287	23,233	22,536	20,753	19,236	17,325
Oklahoma	10,052	9,795	9,835	9,316	8,743	8,034
Texas	81,128	78,190	76,419	72,234	68,279	60,264
Mountain	**44,914**	**42,466**	**41,395**	**37,845**	**35,838**	**34,341**
Arizona	8,998	8,003	8,065	7,428	7,255	7,203
Colorado	6,721	6,900	6,871	6,506	6,245	5,646
Idaho	5,101	4,798	4,603	4,683	4,916	5,303
Montana	5,839	5,815	6,111	6,106	5,759	5,922
Nevada	5,478	4,936	4,390	2,616	2,592	2,397
New Mexico	2,941	2,945	2,922	2,645	2,382	2,166
Utah	4,799	4,448	4,100	3,858	3,299	2,578
Wyoming	5,036	4,621	4,333	4,003	3,390	3,127
Pacific Contiguous	**99,694**	**97,101**	**99,725**	**96,782**	**91,098**	**92,996**
California	52,838	51,888	54,108	51,812	51,185	49,272
Oregon	13,964	13,847	14,010	13,623	12,815	14,108
Washington	32,892	31,366	31,607	31,347	27,099	29,616
Pacific Noncontiguous	**3,947**	**3,785**	**3,376**	**3,454**	**3,347**	**3,168**
Alaska	881	757	436	619	590	504
Hawaii	3,066	3,028	2,940	2,835	2,757	2,664
Total U.S.	**825,716**	**815,067**	**841,903**	**809,078**	**788,037**	**754,069**

Note: Totals may not equal sum of components because of independent rounding. U.S. total includes all 50 states and Washington D.C. For coverage and universe definition, see Technical Notes. The 1981 data are preliminary.

Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Table 127. Sales of Electric Energy to Ultimate Other Customers by Census Region and State, 1976-1981

(Gigawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**1,903**	**1,978**	**1,914**	**1,865**	**1,824**	**1,733**
Connecticut	252	257	258	258	260	250
Maine	165	171	177	190	187	183
Massachusetts	1,065	1,138	1,074	1,004	963	910
New Hampshire	91	84	86	78	74	67
Rhode Island	183	180	175	169	169	160
Vermont	147	148	144	166	171	163
Middle Atlantic	**11,871**	**11,886**	**11,813**	**11,868**	**11,769**	**11,816**
New Jersey	476	465	461	477	484	472
New York	9,932	9,697	9,468	9,429	9,302	9,441
Pennsylvania	1,463	1,724	1,884	1,962	1,983	1,904
East North Central	**13,207**	**13,370**	**13,451**	**13,305**	**13,179**	**12,896**
Illinois	6,221	6,265	6,469	6,508	6,351	6,237
Indiana	666	645	658	602	617	638
Michigan	1,655	1,605	1,610	1,541	1,515	1,457
Ohio	3,703	3,886	3,726	3,607	3,665	3,520
Wisconsin	962	969	988	1,047	1,031	1,044
West North Central	**3,838**	**3,954**	**4,071**	**3,936**	**3,813**	**4,002**
Iowa	576	583	564	561	550	558
Kansas	528	548	529	528	502	493
Minnesota	866	815	793	766	743	789
Missouri	861	1,002	1,179	1,103	1,052	1,149
Nebraska	518	524	523	509	449	465
North Dakota	282	276	273	270	255	250
South Dakota	206	206	210	199	261	298
South Atlantic	**12,446**	**12,101**	**11,705**	**11,365**	**10,845**	**10,557**
Delaware	63	67	73	66	68	67
Florida	3,120	2,984	2,669	2,375	2,239	2,147
Georgia	695	675	582	551	536	517
Maryland/DC	860	828	637	650	639	645
North Carolina	1,136	1,196	1,460	1,511	1,521	1,449
South Carolina	887	881	907	932	883	854
Virginia	5,588	5,379	5,286	5,193	4,873	4,793
West Virginia	98	91	91	87	86	85
East South Central	**4,021**	**4,023**	**3,900**	**3,573**	**3,627**	**3,639**
Alabama	450	409	352	338	386	586
Kentucky	1,948	1,947	1,867	1,765	1,788	1,607
Mississippi	713	705	660	648	602	571
Tennessee	910	962	1,021	822	850	874
West South Central	**11,106**	**11,037**	**10,863**	**11,144**	**10,629**	**9,580**
Arkansas	771	721	804	822	804	763
Louisiana	4,160	3,791	3,760	3,651	3,487	3,077
Oklahoma	1,949	1,968	1,812	1,746	1,711	1,580
Texas	4,226	4,557	4,487	4,925	4,626	4,161
Mountain	**5,215**	**4,105**	**4,106**	**3,945**	**4,260**	**4,075**
Arizona	2,217	1,425	1,487	1,444	1,743	1,618
Colorado	694	760	756	687	649	632
Idaho	93	87	89	84	85	78
Montana	139	137	154	158	189	203
Nevada	528	241	225	204	285	290
New Mexico	647	598	549	539	535	521
Utah	760	723	721	705	683	648
Wyoming	137	134	125	124	92	84
Pacific Contiguous	**13,411**	**11,135**	**11,105**	**12,077**	**10,457**	**11,170**
California	9,528	7,455	8,025	9,146	7,760	8,396
Oregon	502	516	563	519	528	512
Washington	3,381	3,164	2,517	2,412	2,169	2,262
Pacific Noncontiguous	**132**	**142**	**142**	**137**	**168**	**164**
Alaska	73	70	68	59	88	91
Hawaii	59	72	74	78	80	73
Total U.S.	**77,149**	**73,732**	**73,070**	**73,215**	**70,571**	**69,631**

Note: Totals may not equal sum of components because of independent rounding. U.S. total includes all 50 states and Washington D.C. For coverage and universe definition, see Technical Notes. The 1981 data are preliminary.

Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

Table 128. Sales of Electric Energy to All Ultimate Customers by Census Region and State, 1976-1981

(Gigawatthours)

Census Region and State	1981	1980	1979	1978	1977	1976
New England	**77,860**	**77,734**	**76,905**	**75,011**	**72,547**	**71,364**
Connecticut	21,225	21,202	21,104	20,581	19,991	19,434
Maine	8,445	8,185	8,072	7,977	7,571	7,121
Massachusetts	33,100	33,271	32,941	32,272	31,498	31,218
New Hampshire	5,990	5,994	5,966	5,778	5,414	5,271
Rhode Island	5,049	5,132	5,071	4,953	4,830	4,828
Vermont	4,050	3,951	3,751	3,452	3,242	3,491
Middle Atlantic	**255,653**	**254,639**	**254,025**	**248,897**	**243,114**	**235,527**
New Jersey	49,400	49,585	48,551	47,945	46,213	45,007
New York	105,892	105,310	104,893	103,388	101,347	98,384
Pennsylvania	100,362	99,744	100,581	97,564	95,554	92,135
East North Central	**373,835**	**376,060**	**391,701**	**385,836**	**379,078**	**358,914**
Illinois	94,922	96,949	97,846	97,454	92,903	88,059
Indiana	60,309	60,415	61,632	59,805	59,834	56,331
Michigan	69,585	69,680	73,917	73,504	72,042	69,756
Ohio	112,050	112,111	121,514	119,257	120,179	112,257
Wisconsin	36,968	36,905	36,792	35,816	34,120	32,511
West North Central	**143,752**	**146,354**	**142,323**	**138,137**	**126,974**	**121,491**
Iowa	24,364	24,858	24,408	23,954	22,351	21,080
Kansas	21,204	21,840	20,535	20,488	18,943	18,080
Minnesota	33,454	32,998	33,253	31,461	28,054	27,958
Missouri	41,113	42,652	40,470	39,452	36,555	34,016
Nebraska	13,348	13,744	13,356	13,095	12,414	12,081
North Dakota	5,250	5,178	5,234	4,935	4,220	3,970
South Dakota	5,020	5,084	5,067	4,752	4,436	4,305
South Atlantic	**366,264**	**359,736**	**346,095**	**339,892**	**326,762**	**307,696**
Delaware	5,820	5,819	5,905	5,679	5,477	5,360
Florida	93,120	90,766	86,621	84,710	79,357	73,977
Georgia	51,939	51,209	48,818	49,154	47,407	44,304
Maryland/DC	42,114	41,590	40,080	38,935	37,742	35,942
North Carolina	64,825	63,889	61,498	60,354	58,737	55,006
South Carolina	37,914	37,264	35,684	35,644	34,453	32,283
Virginia	49,419	48,369	46,764	45,903	44,513	42,688
West Virginia	21,113	20,831	20,725	19,513	19,075	18,136
East South Central	**189,672**	**196,804**	**195,952**	**193,452**	**197,595**	**189,255**
Alabama	48,758	50,367	50,220	49,530	47,645	44,314
Kentucky	47,778	49,787	50,428	49,257	53,359	52,163
Mississippi	22,775	23,258	22,174	22,287	21,369	19,966
Tennessee	70,361	73,391	73,130	72,378	75,222	72,811
West South Central	**295,637**	**289,916**	**271,626**	**264,640**	**247,527**	**221,400**
Arkansas	27,087	26,499	24,717	23,994	22,997	20,576
Louisiana	54,893	52,877	50,368	48,282	44,724	39,821
Oklahoma	30,697	31,109	28,805	28,543	26,813	24,459
Texas	182,961	179,430	167,736	163,821	152,992	136,545
Mountain	**115,727**	**109,225**	**107,375**	**99,527**	**94,615**	**89,781**
Arizona	29,769	26,762	26,052	24,028	23,315	22,128
Colorado	21,145	20,870	20,153	18,908	17,836	16,706
Idaho	14,316	13,707	13,988	12,961	13,514	13,232
Montana	10,931	10,825	11,129	10,786	10,013	9,911
Nevada	11,409	10,408	10,340	8,896	8,032	7,743
New Mexico	8,944	8,778	8,582	8,050	7,679	7,207
Utah	11,502	10,705	10,415	9,748	8,808	7,947
Wyoming	7,710	7,169	6,716	6,150	5,418	4,906
Pacific Contiguous	**284,139**	**275,073**	**276,414**	**263,991**	**251,877**	**251,990**
California	174,419	167,567	169,590	162,647	158,800	156,018
Oregon	37,878	37,848	38,273	36,004	34,288	34,974
Washington	71,842	69,658	68,551	65,340	58,789	60,999
Pacific Noncontiguous	**8,901**	**8,908**	**8,683**	**8,539**	**8,272**	**7,828**
Alaska	2,559	2,577	2,484	2,581	2,478	2,240
Hawaii	6,342	6,331	6,199	5,958	5,795	5,588
Total U.S.	**2,111,440**	**2,094,449**	**2,071,099**	**2,017,922**	**1,948,361**	**1,855,246**

Note: Totals may not equal sum of components because of independent rounding. U.S. total includes all 50 states and Washington D.C. For coverage and universe definition, see Technical Notes. The 1981 data are preliminary.

Source: Federal Energy Regulatory Commission Form 5 and predecessor systems.

12. Projections

Projections of both peak load and net energy for load constitute the foundation for planning, construction, and operating activities in the electric utility industry. Utilities plan the capacity of their generating plants to meet expected peak load requirements plus a reserve margin. Projections of peak load and load duration also may influence the choice of kind of generating capacity.

For example, peaking units or pumped storage, as opposed to baseload capacity, are used when maximum peak loads are of short duration. Projections are useful for evaluating interchange capabilities and for joint planning with other systems. The combination of peak load and net energy for load projections form a basis for planning fuel requirements. Demand and energy projections play an important role in the selection of an economical and reliable combination of resources for system operating purposes.

These projections also are the starting point for financial planning, since capacity and fuel strategies must eventually be translated into financial requirements. The unamortized cost of plants and the cost of fuel are major costs of operating an electric utility. Estimates of many of the remaining costs also are based on either energy or load projections, as are estimates of revenue since these projections are used to make rate analyses and to develop comprehensive marketing plans.

Long-term projections by the utilities indicate they do not expect a return to the historical annual growth rate of peak loads (about 7 percent annually prior to 1974). As Table 129 shows, utilities project that peak loads will grow by about 3 percent annually until 1991.

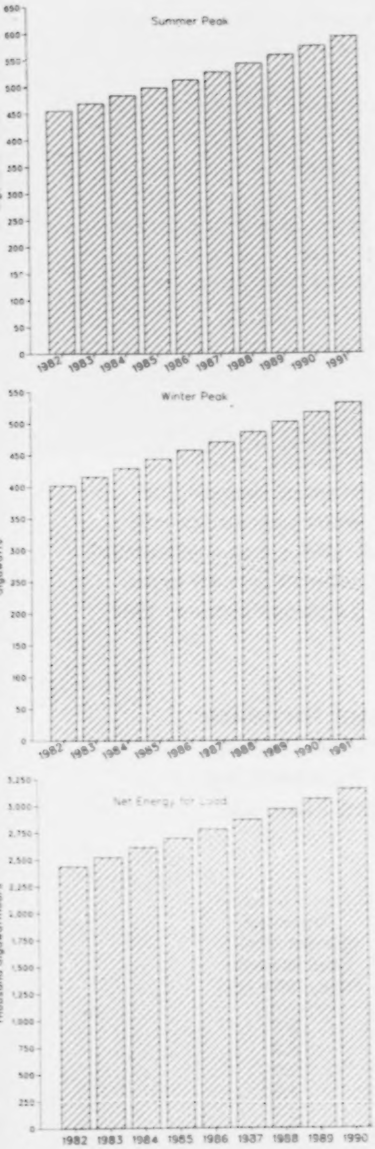
Table 129. Projected Winter and Summer Peak Loads for Major Electric Utility Systems in the United States, 1982-1991

(Megawatts)

Year	Winter Peak Load	Percent Change from Previous Year	Summer Peak Load	Percent Change from Previous Year
1982	402,370	-	453,731	-
1983	416,305	3.5	468,061	3.2
1984	430,497	3.4	483,009	3.2
1985	444,568	3.3	498,189	3.1
1986	459,430	3.3	513,313	3.0
1987	471,864	2.7	528,219	2.9
1988	487,592	3.3	543,764	2.9
1989	503,545	3.3	559,755	2.9
1990	518,859	3.0	576,040	2.9
1991	534,439	3.0	592,541	2.9

Note: Winter peak load projections are for the winters of 1981-1982 through 1990-1991.
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A.

Projected Energy Loads for Major Systems.



Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A and predecessor systems.

Projections (continued)

Peak Load Growth By NERC Region

Utilities collectively have projected that the summer peak load in the United States will grow annually by an average of 3.0 percent between 1982 and 1991. Utilities also project that winter peak loads will grow annually by an average of 3.2 percent during the same period. The differences in the projections submitted by electric utilities, grouped by NERC Regions, Alaska, and Hawaii, are shown in Table 130 below.

In regard to summer peak loads between 1982 and 1991, Alaskan utilities have projected an average annual increase in peak loads of 7.8 percent, significantly higher than any of the NERC regions or Hawaii. This rate is also well above the projected national average. Among NERC regions, ERCOT projected the highest average annual increase of 4.2 percent for the period. This is only slightly ahead of the 3.7 percent average annual increase projected by SWPP. Hawaiian utilities projected the lowest average annual increase for the period of only 0.9 percent, while among the NERC regions two, MAAC and NPCC, tied for the lowest projected average annual increase of 2.0 percent.

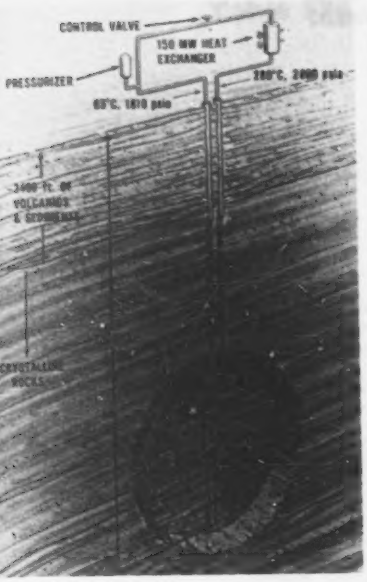
The utilities' projections of the average annual increase in winter (December 1 to March 31) peak loads were slightly higher than those for the summer (June 1 to September 30). Alaskan utilities again projected the highest average annual increase of 9.2 percent while Hawaii again projected the lowest average annual increase of only 1.0 percent for the period 1982 to 1991. Among NERC regions, ERCOT projected the highest average annual increase, 4.5 percent, while NPCC projected the lowest increase, 2.3 percent, in winter peak load growth. Overall, U.S. utilities project that winter peak loads will grow annually by an average of 3.2 percent between 1982 and 1991.

Table 130. Projected Average Annual Increase in Winter and Summer Peak Loads for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii, 1982-1991

(Percent)

North American Electric Reliability Council Region, Alaska, and Hawaii	Projected Winter Peak Load Growth Rate, 1982-1991	Projected Summer Peak Load Growth Rate, 1982-1991
ECAR	3.5	3.3
ERCOT	4.5	4.2
MAAC	2.8	2.0
MAIN	3.4	2.6
MARCA (U.S.)	3.7	3.4
NPCC (U.S.)	2.3	2.0
SERC	2.6	2.6
SWPP	3.6	3.7
WSCC (U.S.)	3.5	3.2
Contiguous U.S.	**3.2**	**3.0**
Alaska	9.2	7.8
Hawaii	1.0	0.9
Average	**3.2**	**3.0**

Note: Winter peak load projections are for the winters of 1981-1982 through 1990-1991.
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A.



Projections (continued)

Net Energy For Load

Nationally, utilities project that net energy for load will grow annually between 1982 and 1990 at an average rate of 3.3 percent. This rate of growth is well ahead of the growth rate experienced by utilities from 1980 to 1981 (0.8 percent). However, the actual net energy for load in 1981 fell short of energy requirements projected previously.

Table 131. Projected Net Energy for Load for Major Electric Utility Systems in the United States, 1982-1990

(Gigawatthours)

Year	Projected Net Energy for Load	Percent Change from Previous Year
1982	2,435,675	-
1983	2,522,227	3.6
1984	2,614,921	3.7
1985	2,698,011	3.2
1986	2,781,740	3.1
1987	2,869,335	3.1
1988	2,964,779	3.3
1989	3,059,067	3.2
1990	3,150,953	3.0

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A.

On the average, net energy for load is projected to grow at an annual rate of 3.3 percent between 1982 and 1990. The projections given by U.S. electric utilities for this period vary considerably by NERC region, Alaska, and Hawaii. In projecting net energy for load, the two noncontiguous States, as in peak load projections, again have predicted the highest and lowest average annual increases.

Alaskan utilities have projected an average annual increase of 11.9 percent, more than 7 percent higher than any other region. At the other end of the scale, utilities in Hawaii project an average annual increase for the period of only 1.2 percent. Among NERC regions, ERCOT projects the highest average annual increase, 4.3 percent, while NPCC projects the lowest average annual increase, 2.4 percent.

Table 132. Projected Average Annual Increase in Net Energy for Load for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii, 1981-1990

(Percent)

North American Electric Reliability Council Region, Alaska, and Hawaii	Projected Average Annual Increase in Net Energy for Load 1982-1990
ECAR	3.4
ERCOT	4.3
MAAC	2.7
MAIN	3.5
MARCA (U.S.)	3.6
NPCC (U.S.)	2.4
SERC	2.9
SWPP	4.1
WSCC (U.S.)	3.2
Contiguous U.S.	**3.3**
Alaska	11.9
Hawaii	1.2
Average	**3.3**

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A.

Table 133. Projected Summer Peak Load for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii, 1982-1991

(Megawatts)

North American ElectricReliability Council Region, Alaska, and Hawaii	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991
ECAR	65,938	69,004	71,692	73,816	75,991	78,114	80,972	83,557	85,868	88,172
MAAC	34,590	35,390	36,270	37,090	37,880	38,560	39,290	39,960	40,760	41,400
MAIN	35,945	36,883	37,621	38,688	39,716	40,606	41,707	42,828	43,985	45,158
MARCA	19,711	20,604	21,453	22,123	22,844	23,478	24,287	25,041	25,830	26,608
NPCC	36,830	37,501	38,268	39,085	39,791	40,581	41,401	42,282	43,132	43,985
SERC	93,522	95,569	97,778	100,342	103,170	106,084	108,902	111,703	114,937	118,148
SWPP	46,325	48,315	50,318	52,339	54,319	56,056	58,028	60,037	62,128	64,223
Interconnected	**332,861**	**343,266**	**353,400**	**363,483**	**373,711**	**383,479**	**394,587**	**405,426**	**416,640**	**427,784**
ERCOT	34,140	35,482	36,842	38,577	40,234	42,009	43,791	45,572	47,270	49,272
WSCC	85,137	87,683	91,082	94,391	97,571	100,886	103,474	106,761	110,062	113,340
Contiguous U.S.	**452,138**	**466,431**	**481,324**	**496,451**	**511,516**	**526,374**	**541,852**	**557,761**	**573,972**	**590,396**
Alaska	471	504	549	591	640	678	733	801	861	924
Hawaii	1,122	1,126	1,136	1,147	1,157	1,167	1,179	1,193	1,207	1,221
Total	**453,731**	**468,061**	**483,009**	**498,189**	**513,313**	**528,219**	**543,764**	**559,755**	**576,040**	**592,541**

Note: Totals may not equal sum of components because of independent rounding
Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A and Predecessor Systems

Table 134. Projected Winter Peak Load for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii, 1981-1991

(Megawatts)

North American ElectricReliability Council Region, Alaska, and Hawaii	1981-1982	1982-1983	1983-1984	1984-1985	1985-1986	1986-1987	1987-1988	1988-1989	1989-1990	1990-1991
ECAR	64,398	67,802	70,492	72,873	74,999	77,187	79,973	82,792	85,103	87,568
MAAC	29,580	30,580	31,580	32,560	33,470	34,330	35,300	36,150	37,020	37,880
MAIN	28,385	29,406	30,252	31,343	32,482	33,611	34,600	35,809	37,054	38,273
MARCA	16,783	17,622	18,446	19,175	19,884	20,501	21,155	21,871	22,571	23,301
NPCC	35,544	36,276	37,103	38,050	38,816	39,606	40,558	41,511	42,501	43,490
SERC	90,627	93,128	95,519	97,707	100,171	102,612	105,342	108,107	110,871	113,888
SWPP	32,573	33,336	34,745	36,187	37,644	39,091	40,364	41,808	43,277	44,822
Interconnected	**297,890**	**308,150**	**318,117**	**327,895**	**337,466**	**346,938**	**357,292**	**368,048**	**378,397**	**389,222**
ERCOT	23,954	24,929	26,109	27,326	28,587	29,896	31,336	32,767	34,173	35,515
WSCC	78,637	81,249	84,213	87,200	91,114	92,653	96,486	100,138	103,570	106,825
Contiguous U.S.	**400,481**	**414,328**	**428,439**	**442,421**	**457,167**	**469,487**	**485,114**	**500,953**	**516,140**	**531,562**
Alaska	729	813	891	968	1,074	1,178	1,268	1,368	1,482	1,606
Hawaii	1,160	1,164	1,167	1,179	1,189	1,199	1,210	1,224	1,237	1,271
Total	**402,370**	**416,305**	**430,497**	**444,568**	**459,430**	**471,864**	**487,592**	**503,545**	**518,859**	**534,439**

Note: Totals may not equal sum of components because of independent rounding

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A and Predecessor Systems

Table 135. Projected Net Energy for Load for Major Electric Utility Systems by NERC Region, Alaska, and Hawaii, 1982-1990

(Megawatthours)

North American ElectricReliability Council Region, Alaska, and Hawaii	1982	1983	1984	1985	1986	1987	1988	1989	1990
ECAR	390,739	409,786	425,514	436,977	451,475	464,454	482,275	497,520	510,857
MAAC	181,295	186,558	192,132	197,427	202,499	207,492	213,019	218,830	224,002
MAIN	168,201	174,522	184,072	190,155	196,342	202,555	208,594	215,114	221,586
MARCA	97,159	101,262	105,393	109,650	113,711	117,087	121,269	125,105	129,079
NPCC	206,079	210,317	215,889	221,519	226,657	231,841	237,190	242,606	248,184
SERC	493,052	506,312	521,320	535,190	550,721	566,894	584,413	600,702	618,271
SWPP	225,347	235,108	244,387	254,606	265,281	275,658	286,655	298,025	310,241
Interconnected	**1,761,873**	**1,823,865**	**1,888,707**	**1,945,527**	**2,006,686**	**2,065,979**	**2,133,414**	**2,197,902**	**2,262,220**
ERCOT	174,529	182,010	189,853	197,867	206,505	216,638	226,263	235,260	244,495
WSCC	489,063	505,567	525,074	542,695	555,890	573,294	590,928	610,841	628,276
Contiguous U.S.	**2,425,464**	**2,511,442**	**2,603,634**	**2,686,089**	**2,769,080**	**2,855,911**	**2,950,605**	**3,044,003**	**3,134,991**
Alaska	3,489	4,005	4,430	4,992	5,654	6,336	6,997	7,789	8,586
Hawaii	6,722	6,780	6,857	6,930	7,006	7,088	7,177	7,274	7,376
Total	**2,435,675**	**2,522,227**	**2,614,921**	**2,698,011**	**2,781,740**	**2,869,335**	**2,964,779**	**3,059,067**	**3,150,953**

Note: Totals may not equal sum of components because of independent rounding

Source: Environmental Protection, Safety, and Emergency Preparedness Form 119A and Predecessor Systems

Glossary

Glossary

Anthracite Coal

Hard and jet black solid fossil fuel with a high luster, it is the highest rank of coal and is mined in northeast Pennsylvania. (See Coal)

ASTM

American Society for Testing and Materials

Available But Not Needed Capability

Net capability of main generating units that are system-owned or system-operated, operable but not considered necessary to carry load, and cannot be connected to load within a 30-minute time period. (See Capability)

Barrel

A liquid measure defined as 42 gallons.

Baseload

Minimum amount of electric power delivered or required over a given period of time. (See Load)

Baseload Capacity

Capacity of the generating equipment normally operated to serve loads on a continuous basis.

Baseload Plant

A plant usually housing high-efficiency, steam-electric units which continuously provides the baseload of a system. (See Baseload)

Bcf

Billion cubic feet.

Bituminous Coal

Most common type of solid fossil fuel; it is soft, dense, and black with well-defined bands of bright and dull material. Bituminous is ranked between anthracite and subbituminous and is mined chiefly in Kentucky, Pennsylvania, and West Virginia. (See Coal)

Boiler

Part of a steam turbine in which water is boiled to produce steam. It consists usually of metal shells and tubes.

Btu (British Thermal Unit)

A standard unit for measuring the quantity of heat energy equal to the quantity of heat required to raise the temperature of one pound of water by one degree Fahrenheit. (See Fahrenheit)

Btu Content of Fuel (Average)

Average heat value per unit quantity of fuel expressed in Btu as determined from tests of fuel samples or defined by contract specifications. (Example: Btu per pound of coal, per gallon of oil, or per cubic foot of gas)

Capability

Maximum load that a generating unit, generating station, or other electrical apparatus can carry under specified conditions for a given period of time, without exceeding approved limits of temperature and stress.

Capacity

Amount of electric power delivered or required for which a generator, turbine, transformer, transmission circuit, station, or system is rated.

Census Regions

Nine geographic divisions of the United States established by the United States Bureau of the Census as an effective basis for statistical analysis. The boundaries of the Census Regions are logical geographic regions congruent with State boundaries.

Circuit

A conductor or a system of conductors through which electric current flows or is intended to flow.

Coal

A black or brownish-black solid fossil fuel formed by the partial decomposition of vegetable matter without free access to air and under the influence of moisture and often increased pressure and temperature. The rank of coal (anthracite, bituminous, subbituminous, and lignite) is determined by its heating value. (See Anthracite Coal, Bituminous Coal, Subbituminous Coal, Lignite Coal)

Glossary (continued)

Coincident Demand

Sum of two or more demands that occur in the same demand interval.

Coincident Peak Load

Sum of two or more peak loads which occur in the same time interval. (See Peak Load)

Coke

Coke is usually made from bituminous coal from which the volatile constituents have been driven off by heat, so that fixed carbon and ash are fused together. Coke is hard and porous.

Commercial Retail Prices of Electricity in Selected Cities

The price of electricity supplied to commercial or business establishments such as stores, offices, restaurants, and garages for lighting and other power purposes.

Compressor

Machine that compresses gases.

Consumption (Fuel)

Amount of fuel consumed for gross generation, fuel used for providing standby service, and oil or gas used for start-up and/or flame stabilization of steam-electric plants. (See Fuel)

Contract Cost

Price of fuels marketed on a contract basis covering a period of one or more years. Contract prices reflect market conditions at the time the contract was negotiated and therefore remain constant throughout the life of the contract or would be adjusted through escalation clauses. Generally, contract prices do not fluctuate widely.

Contract Receipt

Purchases on a contract basis generally covering a period of one or more years.

Cost

Price of fuel purchased by utilities to generate electricity.

Demand

The rate at which electric energy is delivered to or by a system, part of a system, or piece of equipment, at a given instant or averaged over any designated period of time. (See Load)

Demand Interval

The period of time during which the electric energy flow is averaged in determining demand, such as 60-minute, 30-minute, 15-minute, or instantly.

Electric Utility

A corporation, person, agency, authority, or other legal entity or instrumentality which owns and/or operates facilities within the United States, the Commonwealth of Puerto Rico, and/or U.S. territories, for the generation, transmission, distribution, or sale of electric energy, excluding those entities which generate electricity for the primary purpose of producing a product or service.

Energy

The ability to do work. Electric energy is measured in watthours (Wh) and heat energy is generally measured in British thermal units (Btu). (See Btu, Watthour)

Energy Deliveries

Energy generated by one system and delivered to another system through one or more transmission lines.

Energy Receipts

Energy generated by one system and received by another system through one or more transmission lines.

Fahrenheit

Relating or conforming to a thermometric scale where the boiling point of water is at 212 degrees above the zero on the scale, the freezing point is at 32 degrees above zero at standard atmospheric pressure.

Firm Gas

Gas sold on a continuous and generally long-term contract. Firm gas prices exceed interruptible gas prices by widely varying margins, because users often pay a premium for firm purchases.

Glossary (continued)

Fossil Fuel

Any naturally occurring fuel of an organic nature, such as coal, crude oil, and natural gas.

Fossil Fuel Plant

A plant using coal, oil, gas, or other fossil fuel as its source of energy.

Fuel

Any substance that can be burned to produce heat; it sometimes includes materials that can be fissioned in a chain reaction to produce heat.

Full-Forced Outage

Net capability of main generating units that are system-owned or system-operated, but unavailable for load due to emergency reasons.

Gas Turbine Plant

A plant in which the prime mover is a gas-turbine engine. A gas turbine consists typically of an axial-flow air compressor, one or more combustion chambers where liquid or gaseous fuel is burned in excess air, and a turbine, where the hot gases are expanded to drive the compressor and generator.

Generation

Act or process of producing electric energy from other forms of energy; also, the amount of electric energy, expressed in watthours (Wh).

Generator

A machine used to change mechanical energy into electric energy.

Geothermal Plant

A plant in which the prime mover is a steam turbine. The turbine is driven either by steam produced from hot water or by natural steam, both trapped below the surface of the earth's crust.

Gigawatt (GW)

One gigawatt equals 1 billion watts.

Gigawatthour (GWh)

One gigawatthour equals 1 billion watthours.

Gross Generation

Total amount of electric energy produced by the generating units in a generating station or stations, measured at the generator terminals.

Heavy Oil

Fuel oils remaining after the lighter oils have been distilled off during the refining process. Included are products known as American Society for Testing and Materials (ASTM) Grades 4, 5, and 6 and residual fuel oils. Except for start-up and flame stabilization, virtually all oil used in steam plants is heavy oil.

Horsepower

A unit of power equal to 746 watts.

Hydroelectric Power Plant

A plant in which the prime mover is a waterwheel driven by falling water.

Industrial Retail Prices of Electricity in Selected Cities

Price of electricity supplied to industrial establishments such as automotive and steel producing industries.

Installed Nameplate Capacity

The capacity as shown on the manufacturer's identification plate. This appears on apparatus, such as generating units, turbines, or other equipment in a station or system. Installed station capacity does not include auxiliary or house units. The nameplate capacity is the full-load continuous rating of a generator, prime mover, or other electrical equipment under specified conditions as designated by the manufacturer. It is usually indicated on a nameplate attached mechanically to the equipment.

Instantaneous Peak Demand

Maximum demand at the instant of greatest load. (See Load, Maximum Demand)

Integrated Demand

Demand averaged over a specified period, usually determined

Glossary (continued)

by an integrating demand meter or by the integration of a load curve. (See Demand, Load)

Internal Combustion Plant

A plant in which the prime mover is an internal combustion engine. An internal combustion engine has one or more cylinders in which the process of combustion takes place, converting energy released from the rapid burning of a fuel-air mixture into mechanical energy. Diesel engines are the principal types used in electric plants.

Interruptible Gas

Gas sold to customers with a provision that permits curtailment or cessation of service at the discretion of the distributing company under certain circumstances as specified in the service contract. For this reason, interruptible gas prices are lower than firm gas prices.

Kilowatt (kW)

One kilowatt equals one thousand watts.

Kilowatthour (kWh)

One kilowatthour equals one thousand watthours.

Light Oil

Lighter fuel oils distilled off during the refining process. For purposes of this publication, included are products known as American Society for Testing and Materials (ASTM) Grade No. 2 heating oil, kerosene, and jet fuel. Virtually all oil used in internal combustion and gas turbine engines is light oil.

Lignite Coal

A brownish-black coal of the lowest rank; it is mined in North Dakota, Montana and Texas.

Load (Electric)

Amount of electric power delivered or required at any specific point or points on a system.

Maximum Demand

Greatest of all demands of the load under consideration occurring within a specified period of time.

Mcf

Abbreviation for one thousand cubic feet.

MMcf

Abbreviation for one million cubic feet.

Megawatt (MW)

One megawatt equals one million watts.

Megawatthour (MWh)

Megawatthour. One megawatthour equals one million watthours.

Natural Gas

A mixture of hydrocarbon gases, principally methane, occurring in porous geologic formations beneath the earth's surface, often found in association with petroleum.

Net Capability

Net capability of a generating station is the amount of energy that could be produced as demonstrated by test or as determined by actual operating experience less power generated and used for station uses. Net capability may vary with the character of the load, time of year (due to circulating water temperatures in thermal stations or availability of water in hydroelectric power stations), and other characteristic causes.

Net Energy for Load

Net generation of main generating units that are system-owned or system-operated plus energy receipts minus energy deliveries.

Net Generation

Gross generation less the electric energy consumed at the generating station for station use. Energy required for pumping at pumped-storage plants is regarded as plant use and must be deducted from the gross generation. (See Generation, Gross Generation)

Noncoincident Demand

Sum of two or more demands on individual systems that do not occur in the same demand interval. (See Demand, Demand Interval, System)

Glossary (continued)

Noncoincident Peak Load

Sum of two or more peak loads on individual systems that do not occur in the same time interval. Meaningful only when considering loads within a limited period of time, such as a day, week, month, or a heating or cooling season and usually for not more than one year. (See Load, Peak Load)

North American Electric Reliability Council (NERC)

In 1968, the electric industry created the NERC to augment the reliability and adequacy of bulk power supply in the electric utility systems of North America. NERC consists of nine Regional Reliability Council Regions and encompasses essentially all the power systems of the contiguous U.S. and the Canadian systems in Ontario, British Columbia Manitoba, and New Brunswick. (See Section 5 of the "Technical Notes" for a map of areas covered by the Council Region)

Nuclear Fuel

Fuel containing fissionable materials of such composition and enrichment that when placed in a nuclear reactor will support a self-sustaining fission chain reaction and produce heat in a controlled manner for process use.

Nuclear Power Plant

A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a reactor by heat from the fissioning of nuclear fuel.

Off Peak Gas

Gas which is to be delivered and taken on demand when demand is not at its peak. (See Spot Purchase)

Oil

A mixture of hydrocarbons existing in the liquid state in natural underground reservoirs. Oil is often found in association with gas. (See Heavy Oil, Light Oil)

Other Gas

Includes manufactured gas, coke-oven gas, blast-furnace gas, and refinery gas. Manufactured gas is obtained by distillation of coal, by the thermal decomposition of oil, or by the reaction of steam passing through a bed of heated coal or coke. (See Natural Gas)

Other Generation

Other generation includes solar and geothermal generation, and generation from wood, waste, petroleum coke, and wind. (See Generation, Geothermal Plant)

Other Una[illegible]ble Capability

Net capability of main generating units that are system-owned or system-operated, but unavailable for load for reasons other than full-forced outage or scheduled maintenance such as partial outages, legal restrictions.

Peaking Capacity

Generating equipment normally operated during the hours of highest daily, weekly, or seasonal loads. Some generating equipment may be operated at certain times as peaking capacity and at other times to serve loads on a continous basis. (See Capacity, Peak Load)

Peak Load

Maximum load during a specified period of time.

Peak Load Plant

A plant usually housing old, low-efficiency steam units, gas turbines, diesels, or pumped-storage hydroelectric equipment normally used during the peak load periods. (See Peak Load)

Petroleum Coke

A solid hydrocarbon residue of oil distillation, high in carbon content and low in hydrogen.

Plant

A station containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or nuclear energy into electric energy.

Plant Use Electricity

Electric energy used in the o[illegible]ation of a plant. Included in this definition is the energy required for pumping at pumped-storage plants.

Price

Retail cost of electricity.

Glossary (continued)

Prime Mover

The engine, turbine, water wheel, or similar machine which drives an electric generator. For the purpose of this publication, prime mover represents the aggregation of all like equipment within a plant.

Production (Electric)

Act or process of producing electric energy from other forms of energy; also, the amount of electric energy expresses in watthours (Wh).

Pumped-Storage Plant

A hydroelectric plant which generates electric energy during peak load periods. Usually this type of plant uses water previously pumped into a storage reservoir during off-peak periods.

Residential Retail Prices of Electricity in Selected Cities

Price of electricity supplied to residential customers for lighting, refrigeration, cooling, water heating, and other domestic uses.

Receipts

Purchases of fuel.

Reserve Margin

Amount of unused available capability of a generating station. Running and quick start capability + available but not needed capability - peak load.

Running and Quick Start Capability

Net capability of main generating units that are system-owned or system-operated, carrying load or having quick-start capability. In general, quick-start capability refers to generating units that can be available for load within a 30-minute period. (See Capability, Load, Net Capability)

Scheduled Maintenance

Net capability of main generating units that are system-owned or system-operated, but unavailable for load due to inspection or maintenance, in accordance with an advance schedule.

Short Ton

A unit of weight equal to 2,000 pounds.

Spot Purchase

A single shipment of fuel or volumes of fuel to be delivered within one year. Spot purchases are often made by a user to fulfill a certain portion of energy requirements or to meet unanticipated energy requirements usually at a higher than normal cost.

Station (Electric)

A plant containing prime movers, electric generators, and auxiliary equipment for converting mechanical, chemical, and/or nuclear energy into electric energy.

Steam-Electric (Conventional) Plant

A plant in which the prime mover is a steam turbine. The steam used to drive the turbine is produced in a boiler by heat from burning fossil fuels. (See Fossil Fuel, Fuel, Plant, Turbine)

Stock (Fuel)

A supply of fuel accumulated for future use. Includes coal and fuel oil stocks at the plant site, in coal cars or barges at the plant site, and stocks held in central storage yards.

Subbituminous Coal

A dull black solid fossil fuel ranking between lignite and bituminous in heat value; it is mined chiefly in Montana and Wyoming.

System (Electric)

Physically connected generation, transmission, and distribution facilities operated as an integrated unit under one central management, or operating supervision.

Transformer

An electromagnetic device for changing the voltage of alternating current electricity.

Transmission

Act or process of transporting electric energy in bulk from a source or sources of supply to other principle parts of an electric utility system. (See System)

Transmission Circuit

A conductor used to transport electricity from one source to another.

Glossary (continued)

Turbine

A rotary engine actuated by the reaction or impulse or both of a current of fluid (such as water or steam) which is subject to pressure and usually made of a series of curved vanes attached to a central rotating spindle.

Unit Per Day

Average daily quantity that is collected for each day for the period of time during which the quantity is averaged.

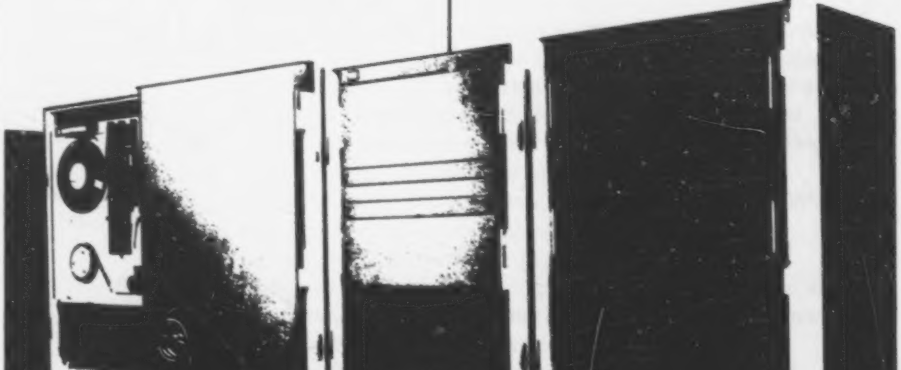
Watt

Electrical unit of power or rate of doing work. A watt is the rate of energy transfer equivalent to one ampere flowing under the pressure of one volt at unity power factor. It is analogous to horsepower or foot-pound-per-minute of mechanical power. One horsepower is equivalent to approximately 746 watts. (See Horsepower)

Watthour (Wh)

One watthour is equal to one watt of power supplied to, or taken from, an electric circuit steadily for one hour.

Technical Notes



Technical Notes

1. Sources of Data

The Office of Coal, Nuclear, Electric and Alternate Fuels is responsible for routine data improvement and quality assurance activities. All operations of this office are done in accordance with formal standards established by EIA. These standards are the measuring rod necessary for quality statistics. Data improvement efforts include verification of data-keyed input by automatic computerized methods, editing by subject matter specialists, and follow-up on nonrespondents. Completed forms received by the Office of Coal, Nuclear, Electric and Alternate Fuels are sorted, screened for completeness of reported information, and keyed onto computer tapes for storage and transfer to data bases on random access storage devices for computer processing. The information coded on the computer tapes is spot-checked against the forms by hand to certify accuracy of the tapes. To insure the quality standards established by EIA, we have designed and implemented algorithms using the past history of data values in the data base to automatically check data input for errors. This automatically reduces the possibility of error entries in the data bases over time as the algorithm learns. Data values rejected by the algorithm are checked with respondents by telephone to correct the problems. Respondent-computerized data files are checked to identify those who fail to respond to the survey. By law, nonrespondents may be fined or otherwise penalized for not filing an EIA data form as prescribed in the instructions. Before invoking the law, EIA tries to obtain the required information by encouraging cooperation of nonrespondents.

The Office of Coal, Nuclear, Electric and Alternate Fuels supports the quality assurance efforts of the data collectors by providing advisory reviews of the structure of information requirements, and of proposed designs for new and revised data collection forms and systems. We also validate the actual performance of working data collection systems, once fielded.

A brief summary of the history of the forms and data collected and published in the **Electric Power Annual** is presented below.

1.1. Federal Power Commission (FPC) Form 4 - Monthly Power Plant Report

Summary Statement of the FPC Form 4 Primary Purpose

The FPC Form 4, Monthly Power Plant Report, collects monthly data from all electric utilities on net generation, consumption of coal, oil, and natural, and end-of-the-month stocks of coal and oil for each plant by prime mover and fuel type combination.

Instrument and Design History

The Bureau of the Census collected and published the results of the five-year census from 1902 to 1937 on the electric light and power industries and some data on industrial production of electric energy.

For the years 1920-1936, the Geological Survey collected, compiled, and published data on capacity and generation of electric utilities. The Federal Power Act, Sections 311 and 312, and FPC Order 141 define the legislative authority to collect power production data. In 1936, this activity was turned over to the Federal Power Commission (FPC), which implemented the Form 4 system.

Data Processing

Data are collected and processed by the staff of the Development, Collection, Processing and Maintenance Branch. Approximately four working days before the end of the month, the preprinted forms are mailed along with a return envelope. The due date for the completed forms is the tenth of the month following the reporting month. The staff manually edits and compares the completed forms with the mailing list, checking for changes of address. Respondents are telephoned for correction or clarification of any apparently unusual data. When 100 percent of total U.S. installed nameplate capacity is represented by the reported data, tables and text are generated for the various publications. Following EIA approval of the **Electric Power Monthly** publication, the data are made available for public use either in custom computer runs requested by individuals, data tapes, or in the publications themselves on a cost-recovery basis.

Presentation

Time series analysis of the plant data have been used in data base quality assurance. This analysis classifies the plants for a computerized data editing algorithm. This algorithm discussed in references numbered 2. and 6. are used to locate errors in the data.

Data from the FPC Form 4 are summarized in the publications, **Electric Power Monthly**(5), **Electric Power Annual, Monthly Energy Review**(8), **Annual Report to Congress**(1), and the **Quarterly Report to Congress**(9). These reports present aggregate totals for electric utilities by U.S.totals, North American Electric Reliability Council Region, and Census Region.

Information Collected

The data items supplied each month by all electric utility respondents are:

Monthly net generation by prime mover: hydroelectric power, steam, internal combustion, gas turbine, combined cycle (steam), combined cycle (gas turbine).

Monthly net generation by fuel type: water, wood waste, nuclear power, light oil (first collected in 1980), heavy oil (1980), anthracite, coke, bituminous, lignite, fuel oil (prior to 1980), natural gas.

In addition, electric utilities operating fossil fuel plants must report:

Monthly fuel consumption: light oil (1980), heavy oil (1980), fuel oil (prior to 1980), anthracite, coke, bituminous, lignite, natural gas.

End-of-month on-site fuel stocks: light oil (1980), heavy oil (1980), fuel oil (prior to 1980), anthracite, coke, bituminous, lignite.

1.2. FPC Form 423 - Monthly Report of Cost and Quality of Fuels for Electric Plants

Summary Statement of the FPC Form 423 Primary Purpose

The Federal Power Commission Form 423 is a monthly record of each fuel purchase delivered to electric power generation plants with a fossil fuel combined capacity of 25 megawatts or greater.

Instrument and Design History

On July 7, 1972, the FPC issued Order Number 453 enacting the New Code of Federal Regulations, Section 141.61, and legally creating the Form 423. Originally, the form included only steam plants, but was amended in 1974 to include internal combustion and combustion turbines.

The FPC Form 423, Monthly Report of Cost and Quality of Fuels for Electric Plants, is submitted by approximately 281 electric utilities for each fossil-fueled plant having a total generating capacity of 25 megawatts or more. A six-month supply of forms is mailed to respondents semi-annually. Completed forms are due on or before the 45th day following the end of the reporting month.

Data Processing

Forms are mailed to respondents using a computerized mailing address file. Completed forms are manually logged in and edited before the data are keypunched for automatic data processing. The electric utility companies are telephoned to obtain data in cases of missing reports and to verify data when questions arise during editing. All respondents' reports are received each month before the final automatic edit of the submitted data. New plants are added to the FPC Form 423 System when respondents indicate the addition of a new plant.

Presentation

An edit program checks the data for errors not found during manual editing. Following verification of the data, computer printouts of aggregated data are produced for inclusion in the publication. After the monthly publication the **Electric Power Monthly** is cleared by EIA, the data become available for public use in either custom computer runs, data tapes, or the publications themselves on a cost-recovery basis.

Statistics in this publication are aggregated from data reported by electric utility plants with a capacity of 25 megawatts or greater in the contiguous United States.

Data from the Form 423 are summarized in the publications, **Cost and Quality of Fuels for Electric Utility Plants - Monthly**(4), **Cost and Quality of Electric Utility Plant Fuels - Annual**(3), **Electric Power Monthly**(5), **Monthly Energy Review**(8), and the **Electric Power Annual**.

Information Collected

The data items supplied each month by all electric utilities for each plant are:

Plant type: steam turbine, combustion turbine, or internal combustion.

Purchase type (Spot Purchase): purchases for which the cost is negotiated for one delivery.

Purchase type (Contract Purchase): purchases for which the cost of deliveries is negotiated in advance for a term of more than one delivery.

Fuel type (Coal): anthracite, bituminous, subbituminous, lignite, and petroleum coke.

Fuel type (Oil): FO2, FO4, FO5, FO6, crude, topped crude, kerosene, jet fuel, and liquefied petroleum gas (LPG).

Fuel type (Gas): natural gas, synthetic natural gas, liquefied natural gas, refinery gas, blast furnace gas, and coke oven gas.

Technical Notes (continued)

Fuel type (Other Fuels): methanol, or specified by footnote.

Coal mines (Type): surface-mined or underground-mined.

Coal mines (District): State and Bureau of Mines (BOM) coal producing district.

Source (Coal): name of mine and county from which coal originated.

Source (Oil): supplier and refinery or port of entry.

Source (Gas): pipeline (supplier) or distributor, producing area by State, or port of entry.

Quantity (Heat Content): average Btu content.

Quantity (Sulfur Content): sulfur content (percentage by weight).

Quantity (Ash Content): ash content (percentage by weight).

Quantity (Cost): cents per million Btu.

1.3. Form EP-119M - Monthly Report of Electric Energy, Capability, and Peak Load

Form EP-119A - Annual Projection of System Changes

Summary Statement of the EP-119M and EP-119A Primary Purpose

The Form EP-119M provides monthly data on system net generation, net energy for load, peak load and system net capability. The Form EP-119A provides, annually, data on near and long-term load projections as well as generating unit and transmission lines construction. Data on Forms EP-119M and EP-119A are collected from major systems in the United States. With a sample size of 263, approximately 96 percent of the generation in the country is obtained.

The Forms EP-119M and EP-119A replaced the Forms ERA-119M and ERA-119A which were implemented in October 1980 by the Economic Regulatory Commission. The Forms ERA-119M and ERA-119A replaced the Form FPC-12E-2 which was implemented in January 1976 by the former Federal Power Commission. The Form FPC-12E-2 expired October 1, 1980.

Instrument and Design History

The Federal Power Act, Section 309 and the Federal Energy Administration Act (P. L. 93-275) define the legislative authority to collect the data. The Form FPC-12E-2 was implemented in 1976 by the former Federal Power Commission.

When the Federal Power Commission was merged into the Department of Energy in October 1977, processing data on this form became the responsibility of the Energy Information Administration. In October 1980, Form FPC-12E-2 was superseded by the Forms ERA-119M and ERA-119A. These two forms were, in turn, superseded in July 1981 by Forms EP-119M and EP-119A. Data items reported on Forms EP-119M and EP-119A, both of which are the responsibility of the EIA, are the same as those previously reported on Form FPC-12E-2.

Data Processing

Data on these forms are submitted through mail by 263 respondents. Several systems that operate as a power pool may submit a single report summarizing data for the pool. The forms are mailed to respondents on the 23rd day of the reporting month. The completed Forms EP-119M are due on or before the 15th day of the month following the reporting month and the completed Forms EP-119A are due by September 30.

The Development, Collection, Processing and Maintenance Branch in the Office of Coal, Nuclear, Electric and Alternate Fuels is responsible for processing of the data reported on Forms EP-119M and EP-119A. Form EP-119M and Schedule 5 (Ten–Year Energy and Peak Load Forecast Data) of the five schedules in Form EP-119A are computerized.

These data are edited manually before being sent for keypunching. Computer programs containing additional edit checks are run. The results are computer printouts, listing individual utility data by electric reliability councils and utility aggregated data by electric reliability councils.

The system used to process data reported on Form EP-119M was originally designed by the former Federal Power Commission, Bureau of Power. The system used to process data on Schedule 5 of Form EP-119A was designed by this office, which maintains a complete documentation for Forms EP-119M and EP-119A. Nonrespondents are contacted monthly by telephone to obtain the required data and to request submission of the appropriate forms.

Presentation

The monthly and annual data are aggregated by electric

Technical Notes (continued)

reliability councils. Operating reserve margins and annual growth rates are computed routinely along with monthly cumulative data.

Data reported on Form EP-119M and Schedule 5, summarized by total U.S. and North American Electric Reliability Council Region, are published in the **Electric Power Monthly** and the **Electric Power Annual**. After it is cleared by EIA, the data become available for public use in either custom computer runs, data tapes, or the publication itself on a cost-recovery basis.

Data on Schedule 3 of Form EP-119A are used as input to the Generating Unit Reference File in production of the **Inventory of Power Plants in the United States**(7). The data are also used as input to publications and studies by the Economic Regulatory Administration and the Federal Energy Regulatory Commission. Schedule 1 of Form EP-119A, Near Term Summer/Winter Capability and Peak Load Data, and Schedule 2 of the same form, Near Term Summer/Winter Receipts and Deliveries, are used by the Economic Regulatory Administration in preparing its electric power supply status reports. Schedule 4, Transmission Line Additions, Revisions and Retirements, along with the other schedules and Form EP-119M are filed in this office.

Information Collected

The Form EP-119A contains five schedules:

Schedule 1: Near Term Summer/Winter Capability and Peak Load Data.

Schedule 2: Near Term Summer/Winter Receipts and Deliveries.

Schedule 3: Generating Unit Additions, Revisions and Retirements - Ten Year Plans.

Schedule 4: Transmission Line Additions, Revisions and Retirements - Six Year Plans.

Schedule 5: Ten-Year Energy and Peak Load Forecast Data.

The data items reported on Form EP-119M are system net generation; energy receipts; energy deliveries; net energy for load and peak load; day, date, and hour monthly peak load occured; and at the time of the monthly peak load, the demand on system net generation; demand on energy receipts; demand on energy deliveries; system installed capacity; system net capability, including running and quick start capability; available but not needed capability; capability unavailable due to full forced outages, and capability unavailable due to other reasons such as partial outages and legal restrictions on generating unit and plant output.

1.4. Form EIA-101 - Monthly Electric Bill Data

Summary Statement of EIA Form 101 Primary Purpose

The Form EIA-101 is used to report monthly electric bill data to the Bureau of Labor Statistics (BLS) for use in computing the Consumer Price and Producer Price Indexes. The form contains two schedules: Schedule 1 - Residential Electric Bill Data for U.S. Bureau of Labor Statistics - Consumer Price Index; Schedule 2 - Commercial and Industrial Electric Bill Data for Bureau of Labor Statistics - Producer Price Index.

Instrument and Design History

The FPC Form 3-P was implemented in 1940 by the Federal Power Commission. In October 1977, the processing of data on this form became the responsibility of the Energy Information Administration when the Federal Power Commission was merged into the Department of Energy. The Form 3-P expired June 30, 1978 and was replaced by Form EIA-101.

Data Processing

The processing of data reported on Form EIA-101 is currently the responsibility of the Development, Collection, Processing and Maintenance Branch in the Office of Coal, Nuclear, Electric and Alternate Fuels. The preprinted forms are mailed each month to approximately 175 electric utilities selected from the Standard Metropolitan Statistical Areas by the Bureau of Labor Statistics. The Bureau of Labor Statistics determines all specifications for data to be included in computing the Consumer Price and Producer Price Indexes.

Data on this form are reported as of the 15th day of the reporting month. The completed forms are due in this office by the 20th day of the reporting month. Upon receipt, the forms are manually logged in and the data are edited by this office. The data are compared to data reported on the utility's rate schedules filed in this office. Nonrespondents are called and the data are received by telephone. All such telephone conversations include a request for submission of the appropriate form to this office. Any schedule showing a change in data from that of the previous month is copied and prepared for pick-up by BLS personnel.

Presentation

Data reported on Form EIA-101 are verified using electric utilities' rate schedules files in this office. Using electric bill data reported on EIA-101, a summary of residential electric bills for 500 kWh of consumption for 40 major cities is published. Data reported on this form are used principally by the Bureau of Labor Statistics in computing the Consumer Price and Producer Price Indexes.

These data are available to the public after verification by BLS and clearance by EIA of the **Electric Power Monthly**.

1.5. FERC Form 5 - Electric Utility Company Monthly Statement

Summary Statement of FERC Form 5 Primary Purpose

The FERC Form 5, Electric Utility Company Monthly Statement, collects monthly data from privately owned electric utilities having annual revenues of $100 million or more and selected other utilities. The form provides financial data for the Department of Commerce to use in calculating the Gross National Product and construction costs. The electric sales data are used by the Federal Reserve Board in their economic analysis.

Instrument and Design History

The collection of electric sales, revenue, and income data was begun in the early 1940's and was established as FPC Form 5 by order 141 in 1947. In 1980 the report was revised with only selected income items remaining and is now known as FERC Form 5.

Data Processing

The processing of data reported on FERC Form 5 is the responsibility of the Electric Power Division of the Energy

Table 136. Estimation Factors for Form 1 Sales Data for 1981

Column 1	Column 2	Column 3	Column 4	Column 5	Column 6
	Privately Owned Electric Utilities Reporting for 1980		Ratio of FPC Form 1 Data to FERC Form 5	Privately Owned Electric Utilities Reporting for 1981 on FERC Form 5	Estimates for 1981 Form 1
	FPC Form 1	FERC Form 5			
Number of Consumers (thousands)					
Residential Service	62,333	61,068	1.0270	62,258	63547
Commercial Service	7,647	7,241	1.0561	7,401	7,816
Industrial Service	372	368	1.1090	379	383
Other Ultimate Consumers	2,263	233	1.1288	236	266
Total Ultimate Consumers	**70,616**	**68,911**	—	**7,0274**	**7,2012**
Resale Consumers	4	4	1.0000	4	4
Total Consumers	**70,620**	**68,914**	—	**7,0278**	**7,2016**
Sales of Electric Energy (million kWh)					
Residential Service	531,729	517,940	1.0266	511,606	525,215
Commercial Service	409,817	400,903	1.0222	411,784	420,925
Industrial Service	628,714	604,329	1.0414	614,865	639,706
Other Sales to Ultimate Consumers	49,886	48,539	1.0267	49,786	51,115
Total Sales to Ultimate Consumers	**1,620,146**	**1,571,760**	—	**1,588,042**	**1,636,961**
Sales for Resale	321,221	285,270	1.1260	348,681	321,214
Total Sales of Electric Energy	**1,941,367**	**1,857,031**	—	**1,897,705**	**1,985,642**
Electric Operating Revenues (million dollars)					
Residential Service	28,500	27,776	1.0261	31,743	32,571
Commercial Service	22,456	21,964	1.0224	25,913	26,493
Industrial Service	23,046	22,294	1.0337	26,361	27,249
Other Sales to Ultimate Consumers	2,360	2,315	1.0194	2,630	2,681
Total Sales to Ultimate Consumers	**76,362**	**74,348**	—	**86,647**	**88,884**
Sales for Resale	9,711	8,873	1.0944	10,985	12,022
Total Sales of Electric Energy	**86,073**	**83,221**	—	**97,632**	**101,016**
Other Electric Revenues	989	868	1.1394	1,479	1,685
Total Electric Operating Revenues	**87,062**	**84,089**	—	**99,111**	**102,701**

Note: Totals may not equal sum of components because of independent rounding. Column 6 represents the product of column 3 multiplied by column 4.
Source: •Federal Energy Regulatory Commission Form 5 and predecessor systems.

Information Administration. The printed forms are mailed each year to approximately 150 electric utilities selected on the basis of size and geographic location.

Data on this form are reported monthly and the completed form is due in this office 40 days after the end of the reported month. Nonrespondents are called and the data are received by telephone. The data are edited and entered into the computer where additional checks are completed.

Information Collected

The data collected include customers, sales, and revenues by subgroups: residential, commercial, industrial, other sales to ultimate customers, and sales for resale. In addition, data are gathered on depreciation, construction, net income before taxes, and extraordinary items.

Table 137. Expansion Factors Used in Calculating 1981 Sales Data

State	Residential	Commercial	Industrial	Other
Alabama	1.731655	1.229486	1.148927	1.260879
Alaska	1.556749	2.641416	2.641416	1.869701
Arizona	1.135819	1.087286	1.176115	1.975512
Arkansas	2.282811	1.717099	1.544626	2.468835
California	1.161921	1.115690	1.305269	1.797306
Colorado	1.733619	1.332753	1.722260	1.686520
Connecticut	1.034338	1.032837	1.087192	1.168860
Delaware	1.466507	1.324368	1.157228	2.023052
Florida	1.149799	1.020565	1.264302	1.151220
Georgia	1.653622	1.157898	1.123811	1.801786
Hawaii	1.272742	1.333768	1.115331	1.156903
Idaho	1.229829	1.108965	1.096152	2.620369
Illinois	1.165800	1.093281	1.133634	1.021222
Indiana	1.328098	1.115579	1.283103	1.293609
Iowa	1.627025	1.067164	1.301277	1.253627
Kansas	1.435356	1.463662	1.553915	1.744824
Kentucky	1.881967	1.529118	1.345604	1.265875
Louisiana	1.088965	0.992690	0.785714	1.060332
Maine	1.283584	1.318109	1.448233	3.460787
Maryland & D.C.	1.099886	1.022114	1.017380	1.148215
Massachusetts	1.178955	1.120857	1.263672	1.892511
Michigan	1.164376	1.182912	1.168552	1.409517
Minnesota	2.045429	1.598774	1.160814	1.688279
Mississippi	2.176693	1.371843	1.434445	1.455162
Missouri	1.741843	1.184500	1.204936	1.897473
Montana	1.623417	1.302725	1.073396	1.233354
Nebraska	1.702701	1.298160	1.726858	1.485817
Nevada	1.079384	1.105753	1.552978	1.228981
New Hampshire	1.363891	1.544463	1.153615	1.513654
New Jersey	1.029840	1.019566	1.029269	1.045418
New Mexico	2.249463	1.935676	3.426209	3.459198
New York	1.025700	1.014730	1.018924	1.011375
North Carolina	1.460135	1.158777	1.300528	1.307427
North Dakota	1.838870	1.268619	1.175072	2.160828
Ohio	1.131600	0.947900	1.059262	1.047874
Oklahoma	1.285238	1.118442	1.261298	1.152840
Oregon	1.369444	1.486907	1.167270	3.316658
Pennsylvania	1.067240	1.027256	1.011920	1.020931
Rhode Island	1.328982	1.328982	1.760556	2.317691
South Carolina	1.448586	1.360956	1.101100	1.946835
South Dakota	4.150853	2.872779	2.960272	7.034553
Tennessee	1.361210	1.085651	1.124214	1.158513
Texas	1.205941	1.129637	1.128628	1.046360
Utah	1.063713	1.115460	0.807882	1.578062
Vermont	2.541736	4.850775	1.963799	1.446538
Virginia	1.149552	1.027192	1.088868	1.039362
Washington	1.532577	1.282948	1.208165	2.514797
West Virginia	1.101903	1.054459	1.105611	1.444234
Wisconsin	1.307873	1.226077	1.171228	1.616902
Wyoming	1.981287	1.357011	1.760896	4.385665

Source: •Federal Power Commission Forms 5, 1, 12 and 1M.

Presentation

Following verification of the data, printouts of the aggregated data are produced for inclusion in the **Electric Power Monthly**. After the **Electric Power Monthly** receives clearance from the EIA the data, tapes, and publications are available on a cost-recovery basis.

The total reported sales is not equal to total sales. The reported sales must be expanded by factors to equal total sales. These factors are calculated by making a census of all sales for a year and dividing by the amount reported on FERC Form 5.

The data for the following table of 1981 estimation factors for Form 1 sales data are taken from the publication **Statistics of Privately Owned Electric Utilities in the United States**. The 1981 data were not compiled in time for use in the **EPA**. We are publishing estimates for 1981. The estimators were calculated by computing the ratio between the 1980 FERC Form 1 data published in the **Statistics of Privately Owned Electric Utilities in the United States** and the FERC Form 5 totals published in the January 1982 **Electric Power Monthly**. The ratios are used to expand the 1981 FERC Form 5 data to the amount estimated for 1981. The estimated amount is equal to the previous year's ratios multiplied by the FERC Form 5 data.

2. Quality of Data

2.1. Data Editing System

The edit systems are automated to edit data from the form surveys on a monthly basis. The edit includes both deterministic checks, in which records are checked for the presence of required fields and their validity, and statistical checks, in which estimation techniques are used to validate data according to its behavior in the past and in comparison to other current fields. When all data have passed the edit process, the system builds monthly master files. These master files are used as input to the **Electric Power Monthly**.

2.2. Data Accuracy FPC Form 4

Introduction

The Federal Power Commission (FPC) Form 4 (Monthly Power Plant Report) is completed monthly by utilities giving information about stock, fuel consumption, generation, and nameplate capacity. Every effort is made by the Electric Power Division (EPD) to assure that the data are accurate. Both manual and automated deterministic and statistical edits are used to check the required fields for validity and to compare the current values with past behavior. These edit checks are designed to detect both reporting and keypunching errors.

As a further step to insure data quality, the EPD assessed reporting errors in the Form 4 System by randomly selecting a sample of utilities and checking reported data values for June 1980 against utility records to determine whether data were reported correctly. Based on the results of this sample, the EPD estimated the accuracy of national aggregate data. The results indicate that the Form 4 data have a high degree of accuracy on a national aggregate basis. These data were estimated to be accurate within one percent, with the exception of heavy oil consumption (three percent high) and internal combustion capacity (four percent low).

It must be remembered that the sample data were taken for a single month, therefore the error assessment is not necessarily applicable to the entire annual data base. The details of this quality assessment are shown below.

Sample Design

A sample of 60 utilities was drawn from 11 strata. Strata 1 through 10 were based on total fossil-fired generation in 1979. Stratum 11 contained those utilities without any fossil-fired plant 25 MW or larger. A sample of 40 utilities was allocated to Strata 1 through 10 to minimize the standard error of the sample estimate of fossil-fired generation. The remaining 20 utilities were selected from Stratum 11. Within each stratum, utilities were randomly selected.

Reporting Error

For June 1980, reporting error is defined as the difference between data originally reported by the utility and corresponding values redetermined and reevaluated by onsite visits. Percent reporting error is defined as reporting error divided by the value determined by the onsite visit. For capacity and generation, estimated percent reporting error was calculated for all prime mover and strata combinations. For consumption, estimated percent reporting error was calculated for all fuel and strata combinations. Total values were calculated using weighted average reporting errors.

Weights were based on two factors:

1. the sampling fraction, i.e., the number of utilities in the sample that fell within a given stratum by the number of utilities in the total population that fell within the same stratum, and

Technical Notes (continued)

2. the number of cases in a stratum, i.e., the number of utility/prime mover/fuel-type combinations in that stratum.

•Capacity Reporting Error

Capacity reporting error was examined by dividing the utilities into categories by size and prime mover. The size categories were small (Stratum 11, those utilities that have no fossil-fired plants with a capacity above 25 MW), medium (Strata 5-10, those utilities that have a fossil-fired plant with a capacity above 25 MW and 1979 annual generation less than 15.0 x 10^6 MWh). The prime mover types were hydroelectric power, steam, internal combustion, gas turbine, steam cycle, and gas-turbine cycle. Percent reporting error for capacity is estimated to be less than one percent for all size and prime mover combinations except internal combustion plants operated by small and medium-sized utilities (see the following table).

•Generation Reporting Error

Generation reporting error was examined by dividing the utilities into the same categories discussed in the above capacity section. Estimated percent reporting error for generation is less than one percent for all categories (see the following table).

•Consumption Reporting Error

Consumption reporting error was examined by dividing the utilities into categories by size (small, medium, and large) and fuel type (light oil, heavy oil, coal, and natural gas). Estimated percent reporting error for consumption was less than five percent for all size and fuel type combinations with the exception of heavy oil at small utilities (see the following table). This was caused by a large clerical error at one of the utilities in Stratum 11.

•Stock

The survey showed that some utilities did not report the total amount of fuel stock. Based on the weighted sample estimate, coal stock was underestimated by 1.4 percent. Oil stock was underestimated by 2.1 percent. The problems with coal and oil stock were caused by unreported amounts in central storage.

The following table shows estimated percent reporting error in FPC Form 4 for capacity, generation, and consumption data, respectively for June 1980:

Table 138. Estimated Percent Reporting Error for FPC Form 4 Data for June 1980

	Utility Size			
	Small	Medium	Large	All
Capacity				
Hydroelectric Power	*	*	*	*
Steam	*	*	*	*
Internal Combustion	-14.4[1]	8.8	*	-3.5
Gas Turbine	-	*	*	*
Steam Cycle	-	-	*	*
Gas-Turbine Cycle	-	-	*	*
All	-1.2	*	*	*
Generation				
Hydroelectric Power	*	*	*	*
Steam	*	*	*	*
Internal Combustion	*	*	*	*
Gas Turbine	-	-	*	*
Steam Cycle	-	-	*	*
Gas-Turbine Cycle	-	-	*	*
All	*	*	*	*
Consumption				
Light Oil	-4.3	*	*	*
Heavy Oil	91.9[2]	*	*	2.9[2]
Coal	*	*	-1.1	*
Natural Gas	*	*	*	*

[1] The large estimated percent reporting error in the cell was caused by two plants reporting incorrect capacities. These plants had not accounted for new units.

[2] The large estimated percent reporting error in these cells is attributable to a gross clerical error at a single plant. The error was a combination of an arithmetic mistake and incorrect reporting of cogeneration. This error in an anomaly and should not be considered typical. Because of this error, the estimate for June 1980 is high.

Note: Reporting error is defined as the difference between data originally reported by the utility and corresponding values redetermined and reevaluated by on-site visits. Percent reporting error is defined as reporting error divided by the value determined by the on-site visit.
Small utilities are defined as those utilities that have no fossil-fired plants with a capacity above 25 MW.
Medium utilities are defined as those utilities that have a fossil-fired plant with a capacity above 25 MW and 1979 annual generation less than 15.0 x 10^6 MWh.
Large utilities are defined as those utilities that had 1979 annual generation greater than or equal to 15.0 x 10^6 MWh.
"*" indicates absolute value of percent reporting error is less than one percent.
"-" indicates that none of the utilities fell within this category.
Source: •Federal Power Commission Form 4.

Standard Error for Estimates of Reporting Error

For generation and capacity the mean error, based on the sample, was calculated using weights determined by the sampling fraction for each stratum and the number of utility/prime mover/fuel type combinations in each stratum. This mean error and its standard error (the square root of the variance of the estimate of the mean error) can be used to test the hypothesis that the mean error is zero.

READEX FICHE

In both cases the 95 percent confidence interval around the estimated mean error contains zero, and the hypothesis that the mean error is zero, at the 95 confidence level, cannot be rejected. That is, the mean reporting errors are not significantly different from zero.

Conclusions

These results confirm that the FPC Form 4 data have a high degree of accuracy on a national aggregate basis. For June 1980, national aggregate data were estimated to be accurate within one percent, with the exception of heavy oil consumption, which was estimated to be three percent high and internal combustion capacity which was estimated to be four percent low. The reporting errors for net generation and capacity were not significant at the 95 percent confidence level.

2.3. Data Accuracy FPC Form 423

Introduction

The Federal Power Commission (FPC) Form 423 (Monthly Report of Cost and Quality of Fuels for Electric Plants) is completed monthly by utilities operating fossil-fuel plants with a generating capacity of 25 megawatts or more. The utilities provide information on quantity and cost of fuel received and the average Btu, sulfur, and ash content.

The Electric Power Division (EPD) manually reviews the completed data forms before the information is entered into a computer file. Automated edits are used to check the data fields for validity and to compare the current values with past behavior.

In addition to these edit checks, the EPD has taken further steps to insure data quality. An assessment of errors in the FPC Form 423 was based on field visits to a sample of 40 utilities. Reported data values for June 1980 were checked against utility records to determine whether data were reported correctly.

Based on the results of this sample, the Form 423 data have a high degree of accuracy on a national aggregate basis. The reporting error in cost in cents per million Btu was -0.4 percent for gas, -1.3 percent for light oil, -1.4 percent for heavy oil, and -0.5 percent for coal. The reporting error in quantity data was 0.2 percent for natural gas, -4.8 percent for light oil, -0.9 percent for heavy oil, and -0.8 percent for coal. The aggregate reported that quality data (Btu and sulfur content) had reporting errors less than 1.0 percent.

Other sources of error in the FPC Form 423 data include retroactive adjustments to prices, lack of specification of detailed procedures for reporting costs, nonreporting of flame stabilization and start-up fuel, and selection or noncoverage error. Steps are being taken to minimize these errors by clarifying the instructions on the form and by checking capacity values on the FPC Form 4 (Monthly Power Plant Report) to determine proper coverage.

It must be remembered that sample data were taken for a single month, therefore there are limitations on generalizations that can be made from the sample. Details of this quality assessment study are shown below.

Sample Design

A sample of 40 utilities was drawn from 10 strata to provide minimum sampling variance for estimates of total fossil-fired generation. The strata were defined in terms of kilowatthours of fossil generation in 1979. Within each stratum, utilities were randomly selected.

Reporting Error

For June 1980, reporting error is defined as the difference between a number reported on the FPC Form 423 minus the number redetermined during the field visit. The errors in four key variables (cost, quantity, Btu content, and sulfur content) were computed for each of the 212 plants in the field study sample. Percent reporting error is defined as the estimated mean error divided by the estimated redetermined value. These weights were based on (1) the sampling fraction (the number of sample utilities within a particular stratum divided by the number of utilities in the total population that fell within the same stratum) and (2) the number of utilities in a stratum.

•Cost Reporting Error

The estimated percent reporting error for cost was less than 1.5 percent for each of the four fuel types. In the case of coal, the largest component of the overall cost error arose from the failure to include internal transportation costs, fixed costs, and premium or penalities for quality.

•Quantity Reporting Error

The estimated reporting error in cost was less than 1.0 percent for coal, heavy oil, and natural gas. Nonreporting of start-up and flame stabilization fuel led to the small quantity of light oil used by utilities being underreported by 4.8 percent. Use of the wrong measurement point or period and estimation of receipts when actual values were not available contributed to these errors.

Technical Notes (continued)

•Btu Content and Sulfur Content

The estimated reporting error for quality data (Btu content and sulfur content) was less than 1.0 percent for each of the four fuels (see the table below). The use of contract specifications rather than laboratory values was the most frequent source of error.

The following table shows estimated percent reporting error in FPC Form 423 in cost, quantity, Btu content, and sulfur content data for the month of June 1980.

Table 139. Estimated Percent Reporting Error for FPC Form 423 Data for June 1980

Fuel Type	Cost	Quantity	Btu Content	Sulfur Content
Coal.............	*	*	*	*
Heavy Oil....	-1.4	*	*	*
Light Oil......	-1.3	-4.8	*	*
Gas...............	*	*	*	N/A

Note: Reporting error is defined as the difference between data originally reported by the utility and corresponding values redetermined during the field visit. Percent reporting error is defined as reporting error divided by the value determined by the field visit.
"*" indicates absolute value of reporting error is less than 1.0 percent.
Source: •Federal Power Commission Form 423.

Standard Error for Estimates of Reporting Error

For cost, quantity, Btu content, and sulfur content, the mean error based on the sample was calculated using weights determined by the sampling fraction for each stratum and the number of utilities in each stratum. This mean error and its standard error (the square root of the variance of the estimate of the mean error) can be used to test the hypothesis that the mean error is zero. For each of the fuel types and the four key data series, with the exception of cost for coal, the mean reporting errors were not significantly different from zero at the 95 percent confidence level.

Other Sources of Error

In addition to reporting error, other sources of error were evaluated. For cost data, errors were caused by the presence of retroactive adjustments to prices and lack of specification of detailed procedures for reporting costs (i.e. how to handle fixed costs).

When these errors are included with the reporting errors, the overall estimates of percent error in cost are -3.1, -2.4, -2.3, and -1.4 for coal, heavy oil, light oil, and gas, respectively.

For quantity data, in addition to the previously discussed reporting error, other errors were introduced by nonreporting of flame stabilization and start-up fuel, and by selection or noncoverage error. Noncoverage error was evaluated by searching the 1980 FPC Form 4 master file for all plants that were eligible for reporting on the FPC Form 423 (those plants having a generating capacity of 25 MW or more). The noncoverage problem was greatest in the area of natural gas receipts at peaking plants. In order to minimize these errors, the instructions on the data collection form are being clarified and routine procedures for checking capacity values on the FPC Form 4 are being implemented. When these errors are included with the respondent errors, the overall estimates of percent error in quantity are -1.1, -1.2, -8.0, and -1.0 for coal, heavy oil, light oil, and gas, respectively.

Conclusions

These results confirm that the FPC Form 423 data have a high degree of accuracy on a national aggregate basis. Based on respondent error for June 1980, national aggregate data were estimated to be accurate within 1.0 percent, with the exception of cost for heavy oil and the cost and quantity of light oil. Steps are being taken to minimize other sources of specification and noncoverage error by clarifying the instructions on the form and by correcting the frame.

2.4. Estimation Procedures

Missing data values are estimated by using the previous month's data. This approach is used to minimize the time in producing the report until further analysis of the data in our data bases is performed.

When all data in a table are estimates, the table title includes the word "estimated." To indicate that an individual cell of a table contains estimated data, a capital "E" (to the left of the number) and an accompanying footnote are used. Subtotals and totals do not indicate "E" if the table clearly shows that any or all the components are estimates. Similarly, any values (such as in daily average or percent change columns) which clearly are calculated from estimated data are not footnoted.

Office of Coal, Nuclear, Electric and Alternate Fuels Data Revision and Correction Policy:

The Office of Coal, Nuclear, Electric and Alternate Fuels has adopted the following policy with respect to the revision and correction of data published in Energy Data Reports and made available in a machine format:

Technical Notes (continued)

1. All data collected by this office (excluding secondary source data) will be published as preliminary data when first appearing in an energy data report.

2. The next publication of the data will be in final form when the data bases are closed.

3. Revisions or corrections will only be made in the event a substantial (greater than one percent) reporting change is received or a substantial (greater than one percent) error is discovered.

4. Revisions or corrections to published secondary source data will be made if and when the organization from which the data was received revises or corrects the data.

5. No revisions will be made without the approval of the Director of the Electric Power Division.

2.5. Confidentiality of the Data

The data collected on the forms used for input to this report are not confidential.

2.6. Explanatory Notes

Percent Change

Percent Change = ((CMY-CMPY)/CMPY) x 100, where CMY is the current month-year and CMPY is the current month-previous year.

FPC Form 4

In all formulas, D is the number of days in the month for aggregates in units per day; otherwise, D is 1. The symbol B, Btu per unit, is 1 for stocks and generation. The symbol O is used to represent stocks, consumption, or generation.

U.S. Aggregates

Total O = (SUM(O)/D)xB, where SUM is an operator meaning summation.

Total O by Prime Mover (P) = (SUM(O (P))/D)xB, where P is steam for coal, gas turbine for gas or oil, internal combustion for gas or oil, and SUM is an operator meaning summation.

Total O by Fuel Type (F) = (SUM(O (F))/D)xB, where F is coal, oil, gas, other, and SUM is an operator meaning summation.

NERC Aggregates

NERC Region O (R) = (SUM(O (R))/D)xB, where R is a NERC region, and SUM is an operator meaning summation.

NERC Region O by Prime Mover (RP) = (SUM(O (RP))/D)xB, where RP is the O for NERC region R and Prime Mover P. P is steam for coal, gas turbine for gas or oil, internal combustion for gas or oil, and SUM is an operator meaning summation.

NERC Region O by Fuel Type (RF) = (SUM(O (RF))/D)xB, where RF is the O for NERC region R and fuel type F. F is coal, oil, gas, or other, and SUM is an operator meaning summation.

Census Region Aggregates

Census Region O (C) = (SUM(O (C))/D)xB, where C is Census Region, and SUM is an operator meaning summation.

Census Region O by Prime Mover (CP) = (SUM(O (CP))/D)xB, where CP is the O for Census Region C and prime mover P. P is steam for coal, gas turbine for gas or oil, internal combustion for gas or oil, and SUM is an operator meaning summation.

Census Region O by Fuel Type (CF) = (SUM(O (CF))/D)xB, where CF is the O for Census Region C and fuel type F. F is coal, oil, gas, other, and SUM is an operator meaning summation.

State Aggregates

State O (S) = (SUM(O (S))/D)xB, where S is a State and SUM is an operator meaning summation.

State O by Prime Mover (SP) = (SUM(O (SP))/D)xB, where SP is the O for State S and prime mover P. P is steam for coal, gas turbine, internal combustion, and SUM is an operator meaning summation.

State O by Fuel Type (SF) = (SUM(O (SF))/D)xB, where SF is the O for State S and fuel type F. F is coal, oil, gas, or other, and SUM is an operator meaning summation.

FPC Form 423

The symbol F is coal, oil, heavy oil, light oil, and gas. In the case of coal, to obtain the other aggregates, replace contract with strip and auger, spot with underground. Gas aggregates are obtained by replacing contract with interruptible and spot with firm.

Technical Notes (continued)

Total Btu

Total Btu = SUM(Quantity x Average Btu Content x U), where SUM is an operator meaning summation, U = 2,000 lb/ton for coal, U= 42 gal/bbl for oil, and U = 1,000 cf/Mcf for gas.

Cents per Million Btu

Cents per Million Btu = SUM(Quantity x Average Btu Content x Cost in cents per Million Btu)/SUM(Quantity x Btu Content), where SUM is an operator meaning summation.

Dollars per Unit

Dollars per Unit = SUM(Quantity x Average Btu Content x U x Cents per Million Btu)/(SUM(Quantity)x100), where SUM is an operator meaning summation, U = 2,000 lb/ton for coal, U = 42 gal/bbl for oil, and U = 1,000 cf/Mcf for gas.

Receipts

U.S. Aggregates

Total Receipts(T) = SUM(Receipts(T)), where T is bituminous, subbituminous, anthracite, and lignite for coal; light and heavy for oil; natural and other for gas and SUM is an operator meaning summation.

NERC Aggregates

NERC Receipts(RT) = SUM(Receipts(RT)), where R is a NERC region; T is bituminous, subbituminous, anthracite, and lignite for coal; light and heavy for oil; natural and other for gas and SUM is an operator meaning summation.

Census Region Aggregates

Census Receipts(CT) = SUM(Receipts(CT)), where C is a Census Region; T is bituminous, subbituminous, anthracite, and lignite for coal; light and heavy for oil; natural and other for gas and SUM is an operator meaning summation.

State Aggregates

State Receipts(ST) = SUM(Receipts(ST)), where S is a State; T is bituminous, subbituminous, anthracite, and lignite for coal; light and heavy for oil; natural and other for gas and SUM is an operator meaning summation.

Cost

United States Aggregates

Total Average Cost of (F) = Cents per million Btu, for the cents per million Btu calculation applied to the contiguous United States.

Total Average Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the contiguous United States.

Total Average Contract Cost of (F) = Cents per million Btu, for the cents per million Btu calculation applied to the contiguous United States.

Total Average Spot Cost of (F) = Cents per million Btu, for the cents per million Btu calculation applied to the contiguous United States.

Total Average Contract Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the contiguous United States.

Total Average Spot Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the contiguous United States.

Census Region Aggregates

Census Region Average Cost of (F) = Cents per Million Btu, for the cents per million Btu calculation applied to the Census Region.

Census Region Average Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the Census Region.

Census Region Average Contract Cost of (F) = Cents per Million Btu, for the cents per million Btu calculation applied to the Census Region.

Census Region Average Spot Cost of (F) = Cents per Million Btu, for the cents per million Btu calculation applied to the Census Region.

Census Region Average Contract Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the Census Region.

Census Region Average Spot Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the Census Region.

State Aggregates

State Average Cost of (F) = Cents per Million Btu, for the cents per million Btu calculation applied to the State.

State Average Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the State.

Technical Notes (continued)

State Average Contract Cost of (F) = Cents per Million Btu, for the cents per million Btu calculation applied to the State.

State Average Spot Cost of (F) = Cents per Million Btu, for the cents per million Btu calculation applied to the State.

State Average Contract Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the State.

State Average Spot Cost of (F) = Dollars per Unit, for the dollars per unit calculation applied to the State.

EP Form 119M and EP Form 119A

SUM is an operator meaning summation. R is a symbol meaning NERC region.

U.S. Aggregates

Total Net Generation = SUM(Net Generation)

Total Energy Receipts = SUM(Energy Receipts)

Total Energy Deliveries = SUM(Energy Deliveries)

Total Net Energy for Load = SUM(Net Energy for Load)

Total Forecast of Net Energy for Load = SUM(Forecast of Net Energy for Load)

Total Running and Quick Start = SUM(Running and Quick Start)

Total Available but Not Needed = SUM(Available but Not Needed)

Total Scheduled Maintenance = SUM(Scheduled Maintenance)

Total Full Forced Outage = SUM(Full Forced Outage)

Total Other Unavailable = SUM(Other Unavailable)

Total Installed Capacity = SUM(Installed Capacity)

Total System Net Capability = SUM(System Net Capability)

Total Demand on Generation = SUM(Demand on Generation)

Total Demand on Receipts = SUM(Demand on Receipts)

Total Demand on Deliveries = SUM(Demand on Deliveries)

Total Peak Load = SUM(Peak Load)

NERC Aggregates

NERC Net Generation(R) = SUM(Net Generation(R))

NERC Energy Receipts(R) = SUM(Receipts(R))

NERC Energy Deliveries(R) = SUM(Deliveries(R))

NERC Net Energy for Load(R) = SUM(Net Energy for Load(R))

NERC Forecast of Net Energy for Load(R) = SUM(Forecast of Net Energy for Load(R))

NERC Running and Quick Start(R) = SUM(Running and Quick Start(R))

NERC Available but Not Needed(R) = SUM(Available but Not Needed(R))

NERC Scheduled Maintenance(R) = SUM(Scheduled Maintenance(R))

NERC Full-Forced Outage(R) = SUM(Full-Forced Outage(R))

NERC Other Unavailable(R) = SUM(Other Unavailable(R))

NERC Installed Capacity(R) = SUM(Installed Capacity(R))

NERC System Net Capability(R) = SUM(System Net Capability(R))

NERC Demand on Generation(R) = SUM(Demand on Generation(R))

NERC Demand on Receipts(R) = SUM(Demand on Receipts(R))

NERC Demand on Deliveries(R) = SUM(Demand on Deliveries(R))

NERC Peak Load(R) = SUM(Peak Load(R))

Percent of Net Generating Capacity Not Available = ((Scheduled Maintenance (MW) + Full-Forced Outage (MW) + Other Unavailable (MW)) /Net Capability (MW)) x 100

Theoretical Operating Reserve Margin = (Running and Quick Start(MW) + Available but Not Needed(MW) - Peak Load (MW))/Peak Load (MW)

EIA Form 101

Retail Prices

If the prices for the 40 selected cities are arranged in a data set in ascending order, then:

Average = (SUM (M)/12)/K, where SUM is an operator meaning summation, M is a monthly retail price data value, and K is 5, 100, and 2,000 for residential, commerical, and industrial data respectively.

Low = the first element of the data set

Median = the average of the 20th and 21st elements of the data set

High = the last element of the data set

FERC Form 5

In all formulas: R is residential, C is commercial, I is industrial, O is other, TUC is total to ultimate consumers, SFR is sales for resale, TS is total sales, RV is revenue value, and kWh is kilowatthours.

U.S. Aggregates

TUC = SUM (R,C,I,O), where SUM is an operator meaning summation.

TS = SUM (TUC,SFR), where SUM is an operator meaning summation.

Prices = RV/kWh

Census Region Aggregates

TUC(CR) = SUM (R(CR),C(CR),I(CR),O(CR)), where CR is census region, and SUM is an operator meaning summation.

State Aggregates

TUC(S) = SUM (R(S),C(S),I(S),O(S)), where S is a State, and SUM is an operator meaning summation.

Table 128 presents the total sales to ultimate consumers. The sales data in Table 128 include that of the privately owned utilities of Table 123, plus sales data for the larger municipals, Federal projects, etc., bringing the total reported sales data coverage to approximately 83 percent. An estimation for 100 percent coverage is done by multiplying the amount of sales reported in a sector by its respective expansion factor. There are 200 expansion factors, four (residential, commercial, industrial, and other) for each of the fifty States. Each factor was calculated by dividing an annual census total by the total amount reported monthly. The coverage of Table 123 includes privately owned electric utilities whose revenues were $100 million or more. This coverage represents approximately 75 percent of the sales to ultimate consumers for the entire industry.

2.7. Rounding Rules for Data

Given an n digit number with r digits to the left of the decimal and d+t digits in the fraction part, with d being the place to which the number is to be rounded and t being the remaining digits which will be truncated, this number is rounded to r+d digits by adding 5 to the (r+d+1)th digit when the number is positive or by subtracting 5 when the number is negative. The t digits are then truncated at the (r+d+1)th digit. The symbol for a rounded number truncated to zero is *.

2.8. Conversion Factors

Average Btu

Average Btu = SUM(Quantity x Average Btu Content)/SUM(Quantity), where SUM is an operator meaning summation. This average Btu is a total national average when SUM is applied to the United States and a NERC average when SUM is applied to a NERC region.

Conversion Factor Tables

The figures in the following conversion tables are used in the preparation of this report for calculating consumption Btu values. The source for the Btu conversion factors is the FPC Form 423. These factors are applied to consumption quantities taken from the FPC Form 4.

Table 140. Average Btu per Pound of Coal, 1976-1981

North American Electric Reliability Council Region	Coal Btu per Pound					
	1981	1980	1979	1978	1977	1976
ECAR	11,527	11,548	11,380	11,203	11,232	11,296
ERCOT	7,355	7,206	7,027	6,872	6,820	6,544
MAAC	12,178	12,226	12,196	12,141	12,081	12,093
MAIN	10,408	10,479	10,478	10,467	10,559	10,541
MARCA (U.S.)	8,516	8,718	8,803	8,799	8,971	8,927
NPCC (U.S.)	12,449	12,543	12,423	12,138	12,283	12,387
SERC	11,974	11,956	11,818	11,685	11,553	11,594
SWPP	8,953	9,050	9,317	9,285	9,590	10,254
WSCC (U.S.)	9,585	9,614	9,674	9,584	9,641	9,579
Contiguous U.S.	**10,551**	**10,647**	**10,685**	**10,638**	**10,756**	**10,841**

Note: The Btu average for the Contiguous United States is used as a conversion factor for Alaska and Hawaii.
Source:•Federal Power Commission Form 423.

Table 141. Average Btu per Barrel of Oil, 1976-1981

North American Electric Reliability Council Region	Oil Btu per Barrel					
	1981	1980	1979	1978	1977	1976
ECAR	143,052	143,288	144,361	142,738	142,229	141,462
ERCOT	144,229	143,288	145,102	146,407	142,569	144,636
MAAC	146,425	143,391	145,937	145,252	144,702	144,641
MAIN	148,475	146,231	145,301	143,505	143,596	142,842
MARCA (U.S.)	147,796	1476,55	145,439	145,157	144,942	145,546
NPCC (U.S.)	148,440	147,112	147,849	147,212	146,581	146,226
SERC	149,005	148,150	148,509	146,858	146,514	146,627
SWPP	148,588	149,090	148,407	147,302	147,408	148,279
WSCC (U.S.)	146,191	145,758	145,674	145,786	145,563	145,748
Contiguous U.S.	**147,911**	**147,531**	**147,090**	**146,270**	**145,919**	**145,975**

Note: The Btu average for the Contiguous United States is used as a conversion factor for Alaska and Hawaii.
Source:•Federal Power Commission Form 423.

Table 142. Average Btu per Cubic Foot of Gas, 1976-1981

North American Electric Reliability Council Region	Gas Btu per Cubic Foot					
	1981	1980	1979	1978	1977	1976
ECAR	791	804	725	799	712	784
ERCOT	1,034	1,043	1,044	1,038	1,033	1,025
MAAC	1,035	1,035	1,039	1,047	1,032	1,035
MAIN	1,018	1,016	1,016	1,019	1,025	1,024
MARCA (U.S.)	992	985	1,005	991	988	991
NPCC (U.S.)	1,030	1,034	1,028	1,010	1,015	1,017
SERC	1,017	1,020	1,029	1,030	1,027	1,020
SWPP	1,028	1,029	1,030	1,032	1,027	1,026
WSCC (U.S.)	1,053	1,047	1,049	1,053	1,051	1,051
Contiguous U.S.	**1,033**	**1,034**	**1,034**	**1,034**	**1,029**	**1,023**

Note: The Btu average for the Contiguous United States is used as a conversion factor for Alaska and Hawaii.
Source:•Federal Power Commission Form 423.

Technical Notes (continued)

3. Use of the Glossary

The terms in the glossary have been defined for general use. Restrictions on the definitions as used in these data collection systems are included in each definition when necessary to define the terms as they are used in this report.

4. Obtaining Copies of Data

Upon EIA approval of the **Electric Power Annual**, the data in this publication become available for public use in either custom computer runs, data tapes, or the publications themselves on a cost-recovery basis. A request is made by writing a letter to:

U.S. Department of Energy
Energy Information Administration
Electric Power Division, EI-541
Forrestal Building
Washington, D. C. 20585

Copies of these data are free to all U.S. Government agencies. However, for a tape copy the agency must submit a tape with the request.

Custom computer runs are obtained by submitting a check of $25.00 made out to the U.S. Treasury with the written request for the hard copy.

Tape copies are obtained by submitting a check of $50.00 made out to the U.S. Treasury and a tape with the written request.

Technical Notes (continued)

5. North American Electric Reliability Council Region Map

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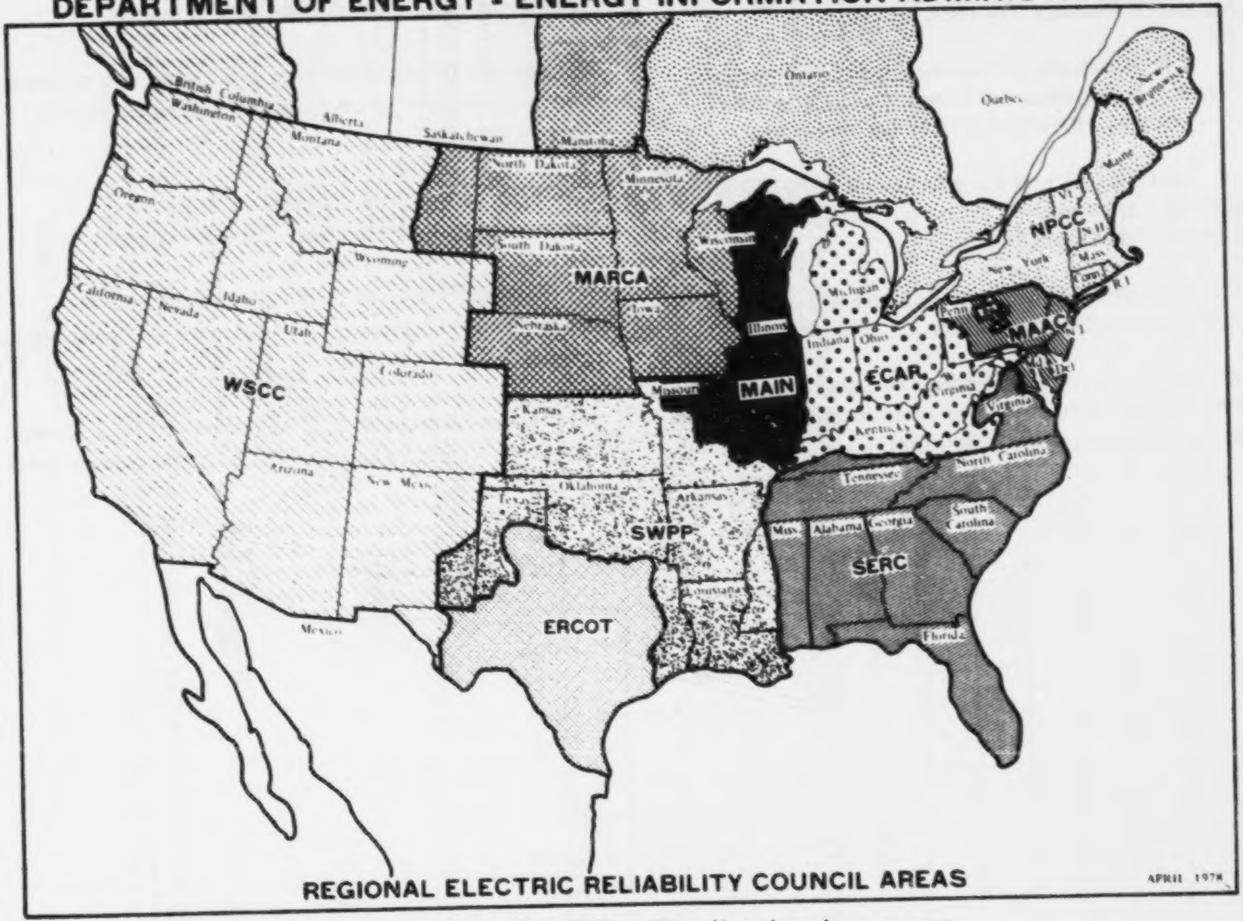

ECAR—East Central Area Reliability Coordination Agreement
MAIN—Mid-American Interpool Network
MAAC—Mid-Atlantic Area Council
MARCA—Mid-Continent Area Reliability Coordination Agreement
NPCC—Northeast Power Coordinating Council
SERC—Southeastern Electric Reliability Council
SWPP—Southwest Power Pool
ERCOT—Electric Reliability Council of Texas
WSCC—Western Systems Coordinating Council

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